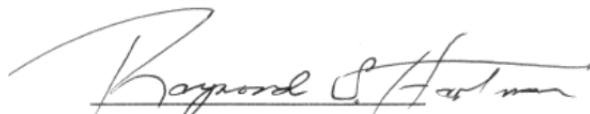


## Exhibit 1

**Supplemental Declaration of Raymond S. Hartman  
in Support of the Certification of the  
Class of Direct Purchasers of Nexium**

**Summary**

I have recently received updated transactional chargeback data relating to Nexium.<sup>1</sup> I have incorporated these additional chargeback data into my calculation of the Nexium net price, and my overcharge calculations have been revised accordingly. My methodology and conclusions as presented in my initial declaration<sup>2</sup> have not changed due to the incorporation of the new chargeback data. On the basis of the factual assumptions that I was asked to make by counsel in my initial declaration (*i.e.*, assumptions about what the evidence will show regarding when generic entry would have occurred if the defendants had not violated the law), and using the exact same formulaic approaches and common evidence that I used in my initial declaration, I calculate the overcharge damages to the Class to be \$24.6 billion under Scenario 1 and \$7.8 billion under Scenario 2. Updated versions of Attachments C, D and E are attached to this declaration.

  
Raymond S. Hartman, Ph.D.

August 15, 2013

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<sup>1</sup> AZ-NX-MDL-00968560.txt, received August 12, 2013.

<sup>2</sup> Declaration of Raymond S. Hartman in Support of the Certification of the Class of Direct Purchasers of Nexium, *In re: Nexium (esomeprazole) Antitrust Litigation*; MDL No. 2409, Civil Action No. 12-md-02409-WGY, US District Court for the District of Massachusetts, July 26, 2013.

**Attachment C**

**Attachment C.1: Summary of Nexium Direct Customer Sales**

Quarter	1	2	3
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)
2008 Pre 4-14	343,730,424	\$1,453,248,377	\$4.23
2008Q2 Post 4-14	330,965,879	\$1,410,444,615	\$4.26
2008Q3	353,676,170	\$1,513,720,101	\$4.28
2008Q4	393,177,650	\$1,729,597,621	\$4.40
2009Q1	344,590,681	\$1,549,462,904	\$4.50
2009Q2	370,370,888	\$1,670,966,347	\$4.51
2009Q3	358,376,852	\$1,616,747,386	\$4.51
2009Q4	358,556,485	\$1,659,417,762	\$4.63
2010Q1	337,613,503	\$1,606,829,125	\$4.76
2010Q2	342,909,973	\$1,645,068,869	\$4.80
2010Q3	336,185,463	\$1,578,344,774	\$4.69
2010Q4	340,358,296	\$1,643,480,690	\$4.83
2011Q1	303,971,918	\$1,526,485,048	\$5.02
2011Q2	319,678,317	\$1,611,187,175	\$5.04
2011Q3	312,062,380	\$1,520,652,211	\$4.87
2011Q4	321,987,932	\$1,641,033,084	\$5.10
2012Q1	264,078,806	\$1,359,897,049	\$5.15
2012Q2	283,790,829	\$1,482,450,406	\$5.22
2012Q3	286,007,757	\$1,495,738,212	\$5.23
2012Q4	296,550,930	\$1,616,111,381	\$5.45
2013Q1	248,813,414	\$1,376,691,190	\$5.53
2013Q2	284,597,553	\$1,634,614,615	\$5.74
2013Q3	262,674,071	\$1,518,078,347	\$5.78
2013Q4	257,215,820	\$1,514,653,791	\$5.89
2014Q1	167,838,379	\$1,006,690,517	\$6.00

Total 7,819,770,368 \$38,381,611,596

Notes:

1 Source: AstraZeneca transactional sales data including AZ-NX-MDL-00968558.txt (customer detail), AZ-NX-MDL-00968559.txt (direct sales), and AZ-NX-MDL-00968560.txt (chargebacks).

The period "2008 Pre 4-14" refers to January 14, 2008 through April 13, 2008.

Oral suspension NDCs have been excluded. The IV form was not included in the raw transactional data.

Records with zero price and non-zero quantity have been excluded.

Outlier records with an invoice date of May 19, 2008, negative quantity and an SAP order reason code of "Z29" have been excluded.

Excludes customers with zero or negative total net sales. Excludes "US AF-USAF ACADEMY, CO".

Since the data in 2013Q2 only extend through May, that quarter is adjusted by multiplying by 3/2.

2013Q3 through 2014Q1 are estimated by taking the linear trend from the previous 8 quarters of available data. 2014Q1 is multiplied by 2/3 to reflect a total only through February 2014.

Through 2013Q2, see notes above. From 2013Q3-2014Q1, = Column 1 \* Column 3.

3 Through 2013Q2, = Column 2 / Column 1. From 2012Q3-2014Q1, based on the linear trend from the previous 8 quarters of available data.

**Attachment C.2.a: Yardstick Calculations for Scenario 1**

Quarter	1			2			3			4			5			6			7			8			9			10			11			12			13			14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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	Extended Units	Dollars	Price (\$/EU)	Extended Units	Dollars	Price (\$/EU)	Generic Market Share	Generic Price Change	Generic Price	Generic Brand Change	Price	Number of Generics	Generic Market Share	Generic Price Change	Generic Price	Generic Brand Change	Price	Number of Generics	Generic Market Share	Generic Price Change	Generic Price	Generic Brand Change	Price	Number of Generics	Generic Market Share	Generic Price Change	Generic Price	Generic Brand Change	Price	Number of Generics	Generic Market Share	Generic Price Change	Generic Price	Generic Brand Change	Price	Number of Generics																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
0	136,872,443	\$636,409,983	\$4.65	78,381,720	\$141,533,738	\$1.81	64.6%	-61.2%	-2.0%	-2.0%	3	64.6%	-40.8%	-2.0%	-2.0%	-2.0%	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															</

**Notes:**

- 1-2 Source: IMS NSP data. Excludes oral suspension and IV forms.  
3 = Column 2 / Column 1.  
4-5 Source: IMS NSP data. Excludes oral suspension and IV forms.  
6 = Column 5 / Column 4.  
7 = Column 4 / (Column 1 + Column 4).  
8 = (Column 6 - Column 3 in Period 0) / Column 3 in Period 0.  
9 = (Column 3 - Column 3 in Period 0) / Column 3 in Period 0.  
10 Number of significant generic manufacturers.  
11 Periods 1-13, = Column 7. Period 14 onward, = Column 7 in Period 13.  
12 Periods 1 and 2, = Column 8; Periods 3-4, = Column 8 \* (2/3); Periods 5-8, = Column 8 starting in Period 5; Period 17 onward, = Column 8 in Period 11.  
13 Period 1-13, = Column 9. Thereafter, based on the linear trend from the previous 8 quarters of available data.  
14 Number of generics in the but-for scenario.

## Attachment C.2.b: Yardstick Calculations for Scenario 2

Quarter	Prevacid			Lansoprazole			Yardsticks Inputs			Final Yardsticks		
	Extended Units	Dollars	Price (\$/EU)	Extended Units	Dollars	Price (\$/EU)	Generic Market Share	Generic Price Change	Brand Price Change	Number of Generics	Generic Price Change	Brand Price Change
0	136,872,443	\$636,409,983	\$4.65									
1	42,894,565	\$195,422,857	\$4.56	78,381,720	\$141,533,738	\$1.81	64.6%	-61.2%	-2.0%	3	-40.8%	-2.0%
2	14,706,983	\$64,037,087	\$4.35	92,295,550	\$157,102,854	\$1.70	86.3%	-63.4%	-6.4%	3	-42.3%	-6.4%
3	10,898,260	\$49,873,328	\$4.58	85,800,550	\$146,170,833	\$1.70	88.7%	-63.4%	-1.6%	3	-64.6%	-1.6%
4	9,121,110	\$43,440,243	\$4.76	86,162,290	\$144,112,624	\$1.67	90.4%	-64.0%	2.4%	3	-66.2%	2.4%
5	7,339,160	\$34,045,546	\$4.64	88,992,030	\$146,280,892	\$1.64	92.4%	-64.6%	-0.2%	4	-68.5%	-0.2%
6	6,046,040	\$28,975,127	\$4.79	88,465,180	\$139,015,772	\$1.57	93.6%	-66.2%	3.1%	4	-71.5%	3.1%
7	5,067,620	\$27,035,196	\$5.33	88,387,110	\$129,412,967	\$1.46	94.6%	-68.5%	14.7%	4	-71.9%	14.7%
8	4,355,650	\$23,515,693	\$5.40	90,154,510	\$119,409,121	\$1.32	95.4%	-71.5%	16.1%	4	-71.4%	16.1%
9	3,160,790	\$17,540,254	\$5.55	90,472,690	\$118,296,822	\$1.31	96.6%	-71.9%	19.3%	4	-75.9%	19.3%
10	3,008,120	\$16,620,485	\$5.53	87,211,070	\$115,779,417	\$1.33	96.7%	-71.4%	18.8%	4	-75.9%	18.8%
11	2,762,430	\$16,543,298	\$5.99	99,922,614	\$111,870,973	\$1.12	97.3%	-75.9%	28.8%	4	-75.9%	28.8%
12	2,609,730	\$15,752,281	\$6.04	88,215,620	\$104,993,978	\$1.19	97.1%	-74.4%	29.8%	5	-75.9%	29.8%
13	1,982,360	\$12,010,968	\$6.06	62,137,066	\$73,753,582	\$1.19	96.9%	-74.5%	30.3%	5	-75.9%	30.3%
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## Notes:

- 1-2 Source: IMS NSP data. Excludes oral suspension and IV forms.  
 3 = Column 2 / Column 1.  
 4-5 Source: IMS NSP data. Excludes oral suspension and IV forms.  
 6 = Column 5 / Column 4.  
 7 = Column 4 / (Column 1 + Column 4).  
 8 = (Column 6 - Column 3 in Period 0) / Column 3 in Period 0.  
 9 = (Column 3 - Column 3 in Period 0) / Column 3 in Period 0.  
 10 Number of significant generic manufacturers.  
 11 Periods 1 - 13, = Column 7; Period 14 onward, = Column 7 in Period 13.  
 12 Periods 1 and 2, = Column 8 \* (2/3); Periods 3-9, = Column 8 starting in Period 5; Period 10 onward, = Column 8 in Period 11.  
 13 Periods 1-13, = Column 9; Period 14 onward, based on the trend from the previous 8 quarters of available data.  
 14 Number of generics in the but-for scenario.

## Attachment C.3: Nexium Direct Purchaser Overcharges Assuming Generic Launch on April 14, 2008

Quarter	1	2	3	4	5	6	7	8	9	10	11	12	13
	Actual Nexium Purchases			Yardsticks		But-For Purchases		Overcharges		Overcharges		Overcharges	
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2008 Pre 4-14	343,730,424	\$1,453,248,377	\$4.23	64.6%	-40.8%	-2.0%	213,899,123	\$2.50	117,056,756	\$4.14	\$376,000,601	\$13,943,863	\$389,944,465
2008Q2 Post 4-14	330,955,879	\$1,410,444,615	\$4.26	86.3%	-42.3%	-6.4%	305,065,083	\$2.44	48,611,087	\$3.96	\$560,962,352	\$15,591,885	\$576,554,237
2008Q3	353,676,170	\$1,513,720,101	\$4.28	86.3%	-42.3%	-6.4%	348,865,292	\$1.55	44,312,358	\$4.16	\$994,249,130	\$10,540,527	\$1,004,789,657
2008Q4	393,177,650	\$1,729,597,621	\$4.40	88.7%	-63.4%	-1.6%	311,604,352	\$1.52	32,986,328	\$4.33	\$927,236,098	\$5,474,335	\$932,710,433
2009Q1	344,590,681	\$1,549,462,904	\$4.50	90.4%	-64.0%	2.4%	342,153,534	\$1.52	28,217,353	\$4.22	\$1,023,297,469	\$8,282,425	\$1,031,579,894
2009Q2	370,370,888	\$1,670,966,347	\$4.51	92.4%	-64.0%	-0.2%	335,450,888	\$1.52	22,925,964	\$4.36	\$1,003,151,681	\$3,522,029	\$1,006,673,711
2009Q3	358,376,852	\$1,616,747,386	\$4.51	93.6%	-64.0%	3.1%	339,113,617	\$1.52	19,442,868	\$4.85	\$1,053,695,037	\$0	\$1,053,695,037
2009Q4	358,556,485	\$1,659,417,762	\$4.63	94.6%	-64.0%	14.7%	322,054,052	\$1.52	15,559,452	\$4.91	\$1,042,980,729	\$0	\$1,042,980,729
2010Q1	337,613,503	\$1,606,829,125	\$4.76	95.4%	-64.0%	16.1%	331,334,344	\$1.49	11,575,629	\$5.05	\$1,094,309,728	\$0	\$1,094,309,728
2010Q2	342,909,973	\$1,645,068,869	\$4.80	96.6%	-64.6%	19.3%	324,976,249	\$1.43	11,209,214	\$5.02	\$1,061,370,339	\$0	\$1,061,370,339
2010Q3	336,185,463	\$1,578,344,774	\$4.69	96.7%	-66.2%	18.8%	331,201,987	\$1.33	9,156,309	\$5.45	\$1,158,324,568	\$0	\$1,158,324,568
2010Q4	340,358,296	\$1,643,480,690	\$4.83	97.3%	-68.5%	28.8%	295,237,742	\$1.20	8,734,176	\$5.49	\$1,127,055,663	\$0	\$1,127,055,663
2011Q1	303,971,918	\$1,526,485,048	\$5.02	97.1%	-71.5%	29.8%	309,794,924	\$1.19	9,883,393	\$5.51	\$1,193,049,965	\$0	\$1,193,049,965
2011Q2	319,678,317	\$1,611,187,175	\$5.04	96.9%	-71.9%	30.3%	302,414,447	\$1.21	9,647,934	\$5.77	\$1,108,579,582	\$0	\$1,108,579,582
2011Q3	312,062,380	\$1,520,652,211	\$4.87	96.9%	-71.4%	36.4%	312,033,133	\$1.02	9,954,799	\$5.92	\$1,272,643,110	\$0	\$1,272,643,110
2011Q4	321,987,932	\$1,641,033,084	\$5.10	96.9%	-75.9%	40.0%	255,914,365	\$1.02	8,164,441	\$6.07	\$1,057,328,664	\$0	\$1,057,328,664
2012Q1	264,078,806	\$1,359,897,049	\$5.15	96.9%	-75.9%	43.6%	275,016,957	\$1.02	8,773,871	\$6.22	\$1,156,646,336	\$0	\$1,156,646,336
2012Q2	283,790,829	\$1,482,450,406	\$5.22	96.9%	-75.9%	47.2%	277,165,345	\$1.02	8,842,411	\$6.38	\$1,167,336,234	\$0	\$1,167,336,234
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.9%	-75.9%	50.8%	287,382,559	\$1.02	7,692,486	\$6.53	\$1,273,586,579	\$0	\$1,273,586,579
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.9%	-75.9%	54.5%	241,120,928	\$1.02	8,798,812	\$6.68	\$1,088,663,539	\$0	\$1,088,663,539
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-75.9%	58.1%	275,798,740	\$1.02	8,121,011	\$6.84	\$1,303,310,265	\$0	\$1,303,310,265
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-75.9%	61.7%	254,553,059	\$1.02	7,952,260	\$7.14	\$1,214,071,467	\$0	\$1,214,071,467
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-75.9%	65.3%	162,649,373	\$1.02	5,189,006	\$7.29	\$25,279,841,835	\$57,355,065	\$25,337,196,900
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-75.9%	68.9%							
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-75.9%	72.5%							

Total

\$25,279,841,835 \$57,355,065 \$25,337,196,900

Adjustment Due to Statute of Limitations: \$747,157,416

Total Damages to the Class: \$24,590,039,484

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2008 Pre 4-14 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2008 Pre 4-14 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12. Due to the statute of limitations, damages from 4/14/2008 through 8/26/2008 are deducted.

Privileged and Confidential: Subject to Court Order

**Attachment C.4: Nexium Direct Purchaser Overcharges Assuming Generic Launch in January 2012**

Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases			Overcharges		
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Total Overcharges
2011Q4	321,987,932	\$1,641,033,084	\$5.10	64.6%	-40.8%	-2.0%	170,675,998	\$3.02	93,402,807	\$4.99	\$378,301,932
2012Q1	264,078,806	\$1,359,897,049	\$5.15	86.3%	-42.3%	-6.4%	244,785,146	\$2.94	39,005,683	\$4.77	\$575,956,504
2012Q2	283,790,829	\$1,482,450,406	\$5.22	88.7%	-64.6%	-1.6%	253,773,783	\$1.80	32,233,974	\$5.02	\$876,812,488
2012Q3	286,007,757	\$1,495,738,212	\$5.23	90.4%	-66.2%	2.4%	268,163,261	\$1.72	28,387,669	\$5.22	\$1,006,017,438
2012Q4	296,550,930	\$1,616,111,381	\$5.45	92.4%	-68.5%	-0.2%	229,857,129	\$1.60	18,956,285	\$5.08	\$911,407,254
2013Q1	248,813,414	\$1,376,691,190	\$5.53	93.6%	-71.5%	3.1%	266,391,374	\$1.45	18,206,179	\$5.25	\$1,152,229,717
2013Q2	284,597,553	\$1,634,614,615	\$5.74	94.6%	-71.9%	14.7%	248,430,464	\$1.43	14,243,606	\$5.85	\$1,079,704,850
2013Q3	262,674,071	\$1,518,078,347	\$5.78	95.4%	-71.4%	16.1%	245,361,622	\$1.46	11,854,197	\$5.92	\$1,087,803,415
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.6%	-75.9%	19.3%	162,172,651	\$1.23	5,665,728	\$6.08	\$773,691,603
2014Q1	167,838,379	\$1,006,690,517	\$6.00								
<b>Total</b>											

\$7,778,957,090      \$62,968,111      \$7,841,925,201

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.b Column 11.
- 5 = C.2.b Column 12.
- 6 = C.2.b Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2011Q4 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2011Q4 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.



**Attachment D**

**Attachment D.1: Direct Customer List Under Scenario 1**

<b>Num.</b>	<b>Customer Name</b>
1	AMERISOURCEBERGEN CORP AMERICAN HEALTH PACKAGING AMERISOURCEBERGEN CORP BELLCO DRUG CORP J M BLANCO
2	BURLINGTON DRUG CO INC
3	CAPITAL WHOLESALE DRUG CO
4	CARDINAL HEALTH INC CARDINAL HEALTH INC KINRAY INC DIK DRUG CO INC
5	CESAR CASTILLO INC
6	DAKOTA DRUG INC
7	DISCOUNT DRUG MART
8	DMS PHARMACEUTICAL GROUP INC
9	DROGUERIA BETANCES INC
10	DROGUERIA CTRL INC/CTRO
11	DROGUERIA DE LA VILLA INC
12	EXPRESS SCRIPTS MEDCO HEALTH SOLUTIONS PRIORITY HEALTHCARE CORP
13	FRANK W KERR CO
14	GOOD SAMARITAN HOSP & HLTH
15	H D SMITH WHLSLE DRUG CO INC
16	HARVARD DRUG GROUP LLC
17	J M SMITH CORP
18	KING DRUG CO OF FLORENCE
19	MCKESSON CORP MC QUEARY BROTHERS DRUG CO INC MCKESSON CORP
20	MIAMI LUKEN INC
21	MORRIS & DICKSON CO LTD INC
22	NORTH CAROLINA MUTUAL WHSLE
23	PHARMACY BUYING ASSOCIATES
24	PRESCRIPTION SUPPLY INC
25	R & S NORTHEAST
26	REBEL DISTRIBUTORS CORP
27	ROCHESTER DRUG COOPERATIVE INC
28	SMITH DRUG COMPANY
29	VALLEY WHLSLE DRUG CO INC
30	VALUE DRUG CO INC
31	WHOLESALERS GROUP INC

Note: Parent companies are listed and numbered above, while subsidiary companies are indented.

**Attachment D.2: Direct Customer List Under Scenario 2**

<b>Num.</b>	<b>Customer Name</b>
1	AMERISOURCEBERGEN CORP AMERISOURCEBERGEN CORP BELLCO DRUG CORP J M BLANCO
2	BURLINGTON DRUG CO INC
3	CAPITAL WHOLESALE DRUG CO
4	CARDINAL HEALTH INC CARDINAL HEALTH INC DIK DRUG CO INC
5	CESAR CASTILLO INC
6	DAKOTA DRUG INC
7	DISCOUNT DRUG MART
8	DROGUERIA BETANCES INC
9	DROGUERIA CTRL INC/CTRO
10	EXPRESS SCRIPTS MEDCO HEALTH SOLUTIONS
11	FRANK W KERR CO
12	H D SMITH WHLSLE DRUG CO INC
13	HARVARD DRUG GROUP LLC
14	J M SMITH CORP
15	MCKESSON CORP
16	MIAMI LUKEN INC
17	MORRIS & DICKSON CO LTD INC
18	NORTH CAROLINA MUTUAL WHSLE
19	PHARMACY BUYING ASSOCIATES
20	PRESCRIPTION SUPPLY INC
21	R & S NORTHEAST
22	ROCHESTER DRUG COOPERATIVE INC
23	SMITH DRUG COMPANY
24	VALLEY WHLSLE DRUG CO INC
25	VALUE DRUG CO INC
26	WHOLESALERS GROUP INC

Note: Parent companies are listed and numbered above, while subsidiary companies are indented.

**Attachment E**

## Attachment E.1: Nexium Direct Purchaser Overcharges Assuming Generic Launch on October 1, 2008

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges		13
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand-Brand Overcharges	Brand-Brand Overcharges	
2008Q3	353,676,170	\$1,513,720,101	\$4.28	64.6%	-40.8%	-2.0%	254,113,494	\$2.53	139,064,156	\$473,740,109	\$28,560,428	\$502,300,538
2008Q4	393,177,650	\$1,729,597,621	\$4.40	86.3%	-42.3%	-6.4%	297,228,351	\$2.47	47,362,330	\$601,983,761	\$23,138,400	\$825,122,161
2009Q1	344,590,681	\$1,549,462,904	\$4.50	88.7%	-63.4%	-1.6%	328,628,924	\$1.57	41,741,964	\$967,301,527	\$12,488,449	\$979,789,976
2009Q2	370,370,888	\$1,670,966,347	\$4.51	90.4%	-64.0%	2.4%	324,070,827	\$1.54	34,306,025	\$963,047,923	\$4,369,824	\$967,417,747
2009Q3	358,376,852	\$1,616,747,386	\$4.51	92.4%	-64.0%	-0.2%	331,239,233	\$1.54	27,317,252	\$1,023,021,241	\$9,779,662	\$1,032,800,903
2009Q4	358,556,485	\$1,659,417,762	\$4.63	93.6%	-64.0%	3.1%	316,015,806	\$1.54	21,597,698	\$1,017,504,469	\$7,516,172	\$1,025,020,641
2010Q1	337,613,503	\$1,606,829,125	\$4.76	94.6%	-64.0%	14.7%	324,315,543	\$1.54	18,594,430	\$1,056,553,081	\$0	\$1,056,553,081
2010Q2	342,909,973	\$1,645,068,869	\$4.80	95.4%	-64.0%	16.1%	320,691,825	\$1.54	15,493,638	\$1,011,872,010	\$0	\$1,011,872,010
2010Q3	336,185,463	\$1,578,344,774	\$4.69	96.6%	-64.6%	19.3%	328,868,804	\$1.51	11,489,492	\$1,090,404,372	\$0	\$1,090,404,372
2010Q4	340,358,296	\$1,643,480,690	\$4.83	96.6%	-66.2%	18.8%	293,836,779	\$1.45	10,135,139	\$1,050,561,289	\$0	\$1,050,561,289
2011Q1	303,971,918	\$1,526,485,048	\$5.02	96.7%	-68.5%	28.8%	311,078,340	\$1.35	8,599,977	\$1,148,588,840	\$0	\$1,148,588,840
2011Q2	319,678,317	\$1,611,187,175	\$5.04	97.3%	-68.5%	28.8%	303,095,737	\$1.22	8,966,644	\$1,107,429,418	\$0	\$1,107,429,418
2011Q3	312,062,380	\$1,520,652,211	\$4.87	97.1%	-71.5%	29.8%	302,033,133	\$1.20	9,954,799	\$1,214,741,441	\$0	\$1,214,741,441
2011Q4	321,987,932	\$1,641,033,084	\$5.10	96.9%	-71.9%	30.3%	312,033,133	\$1.20	9,954,799	\$1,214,741,441	\$0	\$1,214,741,441
2012Q1	264,078,806	\$1,359,897,049	\$5.15	96.9%	-71.4%	36.4%	255,914,365	\$1.22	8,164,441	\$1,005,120,894	\$0	\$1,005,120,894
2012Q2	283,790,829	\$1,482,450,406	\$5.22	96.9%	-75.9%	40.0%	275,016,957	\$1.03	8,773,871	\$1,153,197,028	\$0	\$1,153,197,028
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.9%	-75.9%	43.6%	277,165,345	\$1.03	8,842,411	\$1,163,859,980	\$0	\$1,163,859,980
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.9%	-75.9%	47.2%	287,382,559	\$1.03	9,168,371	\$1,269,982,179	\$0	\$1,269,982,179
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-75.9%	50.8%	241,120,928	\$1.03	7,692,486	\$1,085,639,360	\$0	\$1,085,639,360
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-75.9%	54.5%	275,798,740	\$1.03	8,798,812	\$1,299,851,151	\$0	\$1,299,851,151
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-75.9%	58.1%	254,553,059	\$1.03	8,121,011	\$1,208,812,705	\$0	\$1,208,812,705
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-75.9%	61.7%	249,263,559	\$1.03	7,952,260	\$1,210,945,162	\$0	\$1,210,945,162
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-75.9%	65.3%	162,649,373	\$1.03	5,189,006	\$807,947,370	\$0	\$807,947,370

Total \$22,932,105,312 \$85,852,935 \$23,017,958,246

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2008Q3 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2008Q3 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment E.2: Nexium Direct Purchaser Overcharges Assuming Generic Launch on April 1, 2009**

	1	2	3	4	5	6	7	8	9	10	11	12	13
	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
Quarter													
2009Q1	344,590,681	\$1,549,462,904	\$4.50	64.6%	-40.8%	-2.0%	239,373,322	\$2.66	130,997,566	\$4.41	\$442,506,589	\$13,853,266	\$456,359,855
2009Q2	358,370,888	\$1,670,966,347	\$4.51	86.3%	-42.3%	-6.4%	309,119,679	\$2.60	49,257,173	\$4.21	\$591,980,206	\$14,802,015	\$606,782,221
2009Q3	370,376,852	\$1,616,747,386	\$4.51	88.7%	-63.4%	-1.6%	318,146,042	\$1.65	40,410,444	\$4.43	\$948,248,244	\$8,182,188	\$956,430,432
2009Q4	358,556,485	\$1,659,417,762	\$4.63	90.4%	-64.0%	2.4%	305,295,073	\$1.62	32,318,430	\$4.61	\$959,202,019	\$4,964,603	\$964,166,622
2010Q1	337,613,503	\$1,606,829,125	\$4.76	92.4%	-64.0%	-0.2%	316,784,778	\$1.62	26,125,195	\$4.61	\$1,007,340,355	\$8,131,751	\$1,015,472,106
2010Q2	342,909,973	\$1,645,068,869	\$4.80	93.6%	-64.0%	3.1%	314,679,120	\$1.62	21,506,343	\$4.63	\$968,385,244	\$1,296,325	\$969,681,569
2010Q3	336,185,463	\$1,578,344,774	\$4.69	94.6%	-64.0%	14.7%	321,902,231	\$1.62	18,456,064	\$5.16	\$1,033,688,799	\$0	\$1,033,688,799
2010Q4	340,358,296	\$1,643,480,690	\$4.83	95.4%	-64.0%	16.1%	289,962,892	\$1.62	14,009,026	\$5.22	\$987,122,625	\$0	\$987,122,625
2011Q1	303,971,918	\$1,526,485,048	\$5.02	95.4%	-64.0%	19.3%	308,886,920	\$1.59	10,791,397	\$5.37	\$1,065,785,584	\$0	\$1,065,785,584
2011Q2	319,678,317	\$1,611,187,175	\$5.04	96.6%	-64.6%	18.8%	301,657,487	\$1.52	10,404,894	\$5.34	\$1,011,531,195	\$0	\$1,011,531,195
2011Q3	312,062,380	\$1,520,652,211	\$4.87	96.7%	-66.2%	28.8%	313,325,822	\$1.42	8,662,110	\$5.79	\$1,153,234,780	\$0	\$1,153,234,780
2011Q4	321,987,932	\$1,641,033,084	\$5.10	97.3%	-68.5%	29.8%	256,490,898	\$1.28	7,587,908	\$5.84	\$992,289,682	\$0	\$992,289,682
2012Q1	264,078,806	\$1,359,897,049	\$5.15	97.1%	-71.5%	30.3%	275,016,957	\$1.26	8,773,871	\$5.86	\$1,088,864,273	\$0	\$1,088,864,273
2012Q2	283,790,829	\$1,482,450,406	\$5.22	96.9%	-71.9%	36.4%	277,165,345	\$1.28	8,842,411	\$6.13	\$1,093,654,458	\$0	\$1,093,654,458
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.9%	-71.4%	40.0%	287,382,559	\$1.08	9,168,371	\$6.30	\$1,254,995,917	\$0	\$1,254,995,917
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.9%	-75.9%	43.6%	241,120,928	\$1.08	7,692,486	\$6.46	\$1,073,065,523	\$0	\$1,073,065,523
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-75.9%	47.2%	275,798,740	\$1.08	8,798,812	\$6.62	\$1,285,468,955	\$0	\$1,285,468,955
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-75.9%	50.8%	254,553,059	\$1.08	8,121,011	\$6.78	\$1,195,538,417	\$0	\$1,195,538,417
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-75.9%	54.5%	249,263,559	\$1.08	7,952,260	\$6.95	\$1,197,946,707	\$0	\$1,197,946,707
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-75.9%	58.1%	162,649,373	\$1.08	5,189,006	\$7.11	\$799,465,623	\$0	\$799,465,623
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-75.9%								

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2009Q1 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2009Q1 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

## Attachment E.3: Nexium Direct Purchaser Overcharges Assuming Generic Launch on October 1, 2009

Quarter	1	2	3	4	5	6	7	8	9	10	11	12	13
	Actual Nexium Purchases			Yardsticks		But-For Purchases		But-For Purchases		Overcharges		Overcharges	
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2009Q3	358,376,852	\$1,616,747,386	\$4.51	64.6%	-40.8%	-2.0%	231,737,590	\$2.67	126,818,895	\$4.42	\$453,349,025	\$26,343,422	\$479,692,446
2009Q4	358,556,485	\$1,659,417,762	\$4.63	86.3%	-42.3%	-6.4%	291,210,153	\$2.60	46,403,351	\$4.22	\$627,438,766	\$24,813,691	\$652,252,457
2010Q1	337,613,503	\$1,606,829,125	\$4.76	88.7%	-63.4%	-1.6%	304,262,941	\$1.65	38,647,032	\$4.44	\$956,742,055	\$13,807,183	\$970,549,237
2010Q2	342,909,973	\$1,645,068,869	\$4.80	90.4%	-64.0%	2.4%	304,003,734	\$1.62	32,181,729	\$4.62	\$933,917,507	\$2,380,527	\$936,298,034
2010Q3	336,185,463	\$1,578,344,774	\$4.69	92.4%	-64.0%	-0.2%	314,427,504	\$1.62	25,930,791	\$4.50	\$1,008,015,059	\$8,500,668	\$1,016,515,727
2010Q4	340,358,296	\$1,643,480,690	\$4.83	93.6%	-64.0%	3.1%	284,526,329	\$1.62	19,445,589	\$4.65	\$967,102,821	\$7,233,414	\$974,336,235
2011Q1	303,971,918	\$1,526,485,048	\$5.02	94.6%	-64.0%	14.7%	302,343,633	\$1.62	17,334,684	\$5.18	\$1,033,175,479	\$0	\$1,033,175,479
2011Q2	319,678,317	\$1,611,187,175	\$5.04	95.4%	-64.0%	16.1%	297,680,493	\$1.62	14,381,888	\$5.24	\$967,493,485	\$0	\$967,493,485
2011Q3	312,062,380	\$1,520,652,211	\$4.87	96.6%	-64.6%	19.3%	311,118,570	\$1.59	10,869,362	\$5.38	\$1,089,451,602	\$0	\$1,089,451,602
2011Q4	321,987,932	\$1,641,033,084	\$5.10	96.7%	-66.2%	18.8%	255,273,797	\$1.52	8,805,009	\$5.36	\$925,349,174	\$0	\$925,349,174
2012Q1	264,078,806	\$1,359,897,049	\$5.15	97.3%	-68.5%	28.8%	276,156,296	\$1.42	7,634,532	\$5.81	\$1,050,263,469	\$0	\$1,050,263,469
2012Q2	283,790,829	\$1,482,450,406	\$5.22	97.1%	-71.5%	29.8%	277,789,754	\$1.29	8,218,003	\$5.86	\$1,095,777,434	\$0	\$1,095,777,434
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.9%	-71.9%	30.3%	287,382,559	\$1.27	9,168,371	\$5.88	\$1,201,562,889	\$0	\$1,201,562,889
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.9%	-71.4%	36.4%	241,120,928	\$1.29	7,692,486	\$6.15	\$1,023,546,736	\$0	\$1,023,546,736
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-75.9%	40.0%	275,798,740	\$1.09	8,798,812	\$6.32	\$1,284,487,858	\$0	\$1,284,487,858
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-75.9%	43.6%	254,553,059	\$1.09	8,121,011	\$6.48	\$1,194,632,897	\$0	\$1,194,632,897
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-75.9%	47.2%	249,263,559	\$1.09	7,952,260	\$6.64	\$1,197,060,004	\$0	\$1,197,060,004
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-75.9%	50.8%	162,649,373	\$1.09	5,189,006	\$6.81	\$798,887,032	\$0	\$798,887,032
2014Q1	167,838,379	\$1,006,690,517	\$6.00										

Total \$17,808,253,289 \$83,078,904 \$17,891,332,193

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2009Q3 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2009Q3 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment E.4: Nexium Direct Purchaser Overcharges Assuming Generic Launch on April 1, 2010**

	1	2	3	4	5	6	7	8	9	10	11	12	13
Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2010Q1	337,613,503	\$1,606,829,125	\$4.76	64.6%	-40.8%	-2.0%	221,625,139	\$2.82	121,284,834	\$4.66	\$438,533,087	\$16,250,393	\$454,783,479
2010Q2	342,909,973	\$1,645,068,869	\$4.80	86.3%	-42.3%	-6.4%	289,978,390	\$2.75	46,207,073	\$4.46	\$564,543,514	\$10,993,684	\$575,537,198
2010Q3	336,185,463	\$1,578,344,774	\$4.69	88.7%	-63.4%	-1.6%	301,998,845	\$1.74	38,359,450	\$4.68	\$931,626,147	\$5,539,450	\$937,165,596
2010Q4	340,358,296	\$1,643,480,690	\$4.83	90.4%	-64.0%	2.4%	274,873,866	\$1.71	29,098,052	\$4.87	\$909,765,715	\$4,271,860	\$914,037,575
2011Q1	303,971,918	\$1,526,485,048	\$5.02	92.4%	-64.0%	-0.2%	295,323,066	\$1.71	24,355,251	\$4.75	\$982,831,388	\$7,103,814	\$989,935,203
2011Q2	319,678,317	\$1,611,187,175	\$5.04	93.6%	-64.0%	3.1%	292,099,231	\$1.71	19,963,150	\$4.91	\$923,288,214	\$0	\$923,288,214
2011Q3	312,062,380	\$1,520,652,211	\$4.87	94.6%	-64.0%	14.7%	304,528,008	\$1.71	17,459,924	\$5.46	\$1,030,683,511	\$0	\$1,030,683,511
2011Q4	321,987,932	\$1,641,033,084	\$5.10	95.4%	-64.0%	16.1%	251,908,317	\$1.71	12,170,489	\$5.53	\$865,947,122	\$0	\$865,947,122
2012Q1	264,078,806	\$1,359,897,049	\$5.15	96.6%	-64.6%	19.3%	274,210,888	\$1.68	9,579,941	\$5.68	\$971,036,457	\$0	\$971,036,457
2012Q2	283,790,829	\$1,482,450,406	\$5.22	96.7%	-66.2%	18.8%	276,471,585	\$1.61	9,536,171	\$5.66	\$1,001,162,680	\$0	\$1,001,162,680
2012Q3	286,007,757	\$1,495,738,212	\$5.23	97.3%	-68.5%	28.8%	288,573,126	\$1.50	7,977,804	\$6.13	\$1,140,147,196	\$0	\$1,140,147,196
2012Q4	296,550,930	\$1,616,111,381	\$5.45	97.1%	-71.5%	29.8%	241,664,134	\$1.36	7,149,280	\$6.18	\$1,009,498,375	\$0	\$1,009,498,375
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-71.9%	30.3%	275,798,740	\$1.34	8,798,812	\$6.20	\$1,214,949,935	\$0	\$1,214,949,935
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-71.4%	36.4%	254,553,059	\$1.36	8,121,011	\$6.49	\$1,125,231,318	\$0	\$1,125,231,318
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-75.9%	40.0%	249,263,559	\$1.15	7,952,260	\$6.66	\$1,182,171,040	\$0	\$1,182,171,040
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-75.9%	43.6%	162,649,373	\$1.15	5,189,006	\$6.84	\$789,171,690	\$0	\$789,171,690
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%									

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2010Q1 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2010Q1 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.



**Attachment E.5: Nexium Direct Purchaser Overcharges Assuming Generic Launch on October 1, 2010**

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges		
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges
2010Q3	336,185,463	\$1,578,344,774	\$4.69	64.6%	-40.8%	-2.0%	219,975,972	\$2.78	120,382,324	\$4.60	\$450,559,440	\$27,506,833
2010Q4	340,358,296	\$1,643,480,690	\$4.83	86.3%	-42.3%	-6.4%	262,192,441	\$2.71	41,779,477	\$4.40	\$605,934,101	\$26,123,333
2011Q1	303,971,918	\$1,526,485,048	\$5.02	88.7%	-63.4%	-1.6%	283,649,565	\$1.72	36,028,752	\$4.62	\$941,674,423	\$15,105,074
2011Q2	319,678,317	\$1,611,187,175	\$5.04	90.4%	-64.0%	2.4%	282,189,860	\$1.69	29,872,520	\$4.81	\$898,514,456	\$1,911,910
2011Q3	312,062,380	\$1,520,652,211	\$4.87	92.4%	-64.0%	-0.2%	297,456,719	\$1.69	24,531,213	\$4.68	\$1,013,653,310	\$10,121,023
2011Q4	321,987,932	\$1,641,033,084	\$5.10	93.6%	-64.0%	3.1%	247,185,245	\$1.69	16,893,561	\$4.84	\$855,447,508	\$5,246,807
2012Q1	264,078,806	\$1,359,897,049	\$5.15	94.6%	-64.0%	14.7%	268,402,158	\$1.69	15,388,671	\$5.39	\$948,777,450	\$0
2012Q2	283,790,829	\$1,482,450,406	\$5.22	95.4%	-64.0%	16.1%	272,826,638	\$1.69	13,181,119	\$5.45	\$966,046,053	\$0
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.6%	-64.6%	19.3%	286,540,246	\$1.66	10,010,684	\$5.60	\$1,085,975,667	\$0
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.7%	-66.2%	18.8%	240,517,389	\$1.59	8,296,024	\$5.58	\$949,161,119	\$0
2013Q1	248,813,414	\$1,376,691,190	\$5.53	97.3%	-68.5%	28.8%	276,941,318	\$1.48	7,656,235	\$6.05	\$1,181,211,265	\$0
2013Q2	284,597,553	\$1,634,614,615	\$5.74	97.1%	-71.5%	29.8%	255,126,526	\$1.34	7,547,545	\$6.09	\$1,133,259,732	\$0
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-71.9%	30.3%	249,263,559	\$1.32	7,952,260	\$6.12	\$1,138,734,460	\$0
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-71.4%	36.4%	162,649,373	\$1.34	5,189,006	\$6.40	\$757,538,057	\$0
2014Q1	167,838,379	\$1,006,690,517	\$6.00									

Total

\$12,926,487,042 \$86,014,980 \$13,012,502,022

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2010Q3 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2010Q3 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment E.6: Nexium Direct Purchaser Overcharges Assuming Generic Launch on April 1, 2011**

Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases		Overcharges		Total Overcharges
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)
2011Q1	303,971,918	\$1,526,485,048	\$5.02	64.6%	-40.8%	-2.0%	206,610,355	\$2.97	113,067,962	\$4.92
2011Q2	319,678,317	\$1,611,187,175	\$5.04	86.3%	-42.3%	-6.4%	269,170,909	\$2.90	42,891,472	\$4.70
2011Q3	312,062,380	\$1,520,652,211	\$4.87	88.7%	-63.4%	-1.6%	285,698,879	\$1.84	36,289,053	\$4.94
2011Q4	321,987,932	\$1,641,033,084	\$5.10	90.4%	-64.0%	2.4%	238,799,567	\$1.81	25,279,239	\$5.14
2012Q1	264,078,806	\$1,359,897,049	\$5.15	92.4%	-64.0%	-0.2%	262,169,729	\$1.81	21,621,100	\$5.01
2012Q2	283,790,829	\$1,482,450,406	\$5.22	93.6%	-64.0%	3.1%	267,711,365	\$1.81	18,296,392	\$5.18
2012Q3	286,007,757	\$1,495,738,212	\$5.23	94.6%	-64.0%	14.7%	280,470,338	\$1.81	16,080,592	\$5.76
2012Q4	296,550,930	\$1,616,111,381	\$5.45	95.4%	-64.0%	16.1%	237,346,455	\$1.81	11,466,959	\$5.83
2013Q1	248,813,414	\$1,376,891,190	\$5.53	96.6%	-64.6%	19.3%	274,990,379	\$1.78	9,607,174	\$5.99
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.7%	-66.2%	18.8%	253,915,899	\$1.70	8,758,171	\$5.97
2013Q3	262,674,071	\$1,518,078,347	\$5.78	97.3%	-68.5%	28.8%	250,296,207	\$1.58	6,919,612	\$6.47
2013Q4	257,215,820	\$1,514,653,791	\$5.89	97.1%	-71.5%	29.8%	163,015,795	\$1.43	4,822,584	\$6.52
2014Q1	167,838,379	\$1,006,690,517	\$6.00							

Total

\$10,355,886,737 \$32,150,011 \$10,388,036,747

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2011Q1 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2011Q1 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment E.7: Nexium Direct Purchaser Overcharges Assuming Generic Launch on October 1, 2011**

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2011Q3	312,062,380	\$1,520,652,211	\$4.87										
2011Q4	321,987,932	\$1,641,033,084	\$5.10	64.6%	-40.8%	-2.0%	208,103,076	\$2.89	113,884,856	\$4.77	\$460,045,990	\$36,662,647	\$496,708,638
2012Q1	264,078,806	\$1,359,897,049	\$5.15	86.3%	-42.3%	-6.4%	227,782,445	\$2.81	36,296,360	\$4.56	\$532,103,613	\$21,281,466	\$553,385,079
2012Q2	283,790,829	\$1,482,450,406	\$5.22	88.7%	-63.4%	-1.6%	251,806,710	\$1.79	31,984,119	\$4.80	\$865,795,155	\$13,680,541	\$879,475,696
2012Q3	286,007,757	\$1,495,738,212	\$5.23	90.4%	-64.0%	2.4%	258,629,344	\$1.75	27,378,412	\$4.99	\$899,210,665	\$6,527,848	\$905,738,514
2012Q4	296,550,930	\$1,616,111,381	\$5.45	92.4%	-64.0%	-0.2%	273,957,679	\$1.75	22,593,251	\$4.86	\$1,012,770,039	\$13,286,355	\$1,026,056,394
2013Q1	248,813,414	\$1,376,691,190	\$5.53	93.6%	-64.0%	3.1%	232,896,406	\$1.75	15,917,008	\$5.02	\$880,382,397	\$8,125,703	\$888,508,099
2013Q2	284,597,553	\$1,634,614,615	\$5.74	94.6%	-64.0%	14.7%	269,165,137	\$1.75	15,432,416	\$5.59	\$1,074,162,666	\$2,354,296	\$1,076,516,962
2013Q3	262,674,071	\$1,518,078,347	\$5.78	95.4%	-64.0%	19.3%	250,568,321	\$1.75	12,105,749	\$5.66	\$1,008,898,986	\$1,637,229	\$1,010,366,214
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.6%	-64.6%	16.1%	248,532,972	\$1.72	8,682,847	\$5.82	\$1,035,381,368	\$632,740	\$1,036,014,108
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.7%	-66.2%	18.8%	162,242,253	\$1.65	5,596,126	\$5.79	\$705,933,245	\$1,161,061	\$707,094,306

Total

\$8,474,684,124      \$105,179,886      \$8,579,864,010

Notes:

- |    |  |
|----|--|
| 1  | = C.1 Column 1.                        |
| 2  | = C.1 Column 2.                        |
| 3  | = C.1 Column 3.                        |
| 4  | = C.2.a Column 11.                     |
| 5  | = C.2.a Column 12.                     |
| 6  | = C.2.a Column 13.                     |
| 7  | = Column 1 * Column 4.                 |
| 8  | = Column 3 in 2011Q3 * (1 + Column 5). |
| 9  | = Column 1 * (1 - Column 4).           |
| 10 | = Column 3 in 2011Q3 * (1 + Column 6). |
| 11 | = Column 7 * (Column 3 - Column 8).    |
| 12 | = Column 9 * (Column 3 - Column 10).   |
| 13 | = Column 11 + Column 12.               |

Privileged and Confidential: Subject to Court Order

## Exhibit 2

**UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS**

In re: NEXIUM (ESOMEPRAZOLE)  
ANTITRUST LITIGATION

MDL No. 2409

Civil Action No. 1:12-md-2409

This Document Relates To:

Direct Purchaser Class Actions

**REPORT OF RAYMOND S. HARTMAN  
CALCULATION OF DAMAGES FOR THE  
CLASS OF DIRECT PURCHASERS OF NEXIUM**

Because this report may cite some documents that the defendant(s) designated “Highly Confidential” or “Attorney Confidential,” I have stamped my report “Highly Confidential.” By affixing this stamp, I do not intend to convey that I, or Plaintiffs’ counsel, believe that the subject matter of this report or the documents cited therein are, in fact, highly confidential.

## EXECUTIVE SUMMARY

As previously noted in my declaration in support of class certification,<sup>1</sup> I have been retained by counsel for the named plaintiffs who propose to represent a Class of direct purchasers in this matter,<sup>2</sup> all of whom purchased the brand-name drug Nexium directly from AstraZeneca during the Class Period. In my previous declaration I demonstrated that based on common evidence, it could be shown that the Class of direct purchasers suffered antitrust injury in the form of overcharges and that these overcharges can be calculated on a class-wide basis. In that report I calculated such damages. In this report, I finalize my damages calculations.

Based on the current factual assumptions that I have been asked to make by counsel (*i.e.*, assumptions about what the evidence will show regarding when generic entry would have occurred if the defendants had not violated the law), and using formulaic approaches and common evidence, I calculate the overcharge damages to the Class of direct purchasers to range from \$4.9 billion to \$23.3 billion depending on the assumed “but-for” scenario.

I understand that discovery in this matter is ongoing. I reserve the right to update my analysis as additional information is provided to me.

## I. QUALIFICATIONS

1. My name is Raymond S. Hartman. I am Director and President of Greylock McKinnon Associates (GMA), a consulting and litigation support firm located in Cambridge, Massachusetts. I have previously submitted my qualifications with my July 26, 2013, declaration and therefore I do not repeat them here.

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<sup>1</sup> Declaration of Raymond S. Hartman in Support of Certification of the Class of Direct Purchasers of Nexium, July 26, 2013.

<sup>2</sup> *In re: Nexium (esomeprazole) Antitrust Litigation*; MDL No. 2409, Civil Action No. 12-md-02409-WGY, US District Court for the District of Massachusetts.

## II. DAMAGE CALCULATIONS

2. Counsel has asked me to consider alternative “but-for” scenarios as to when AB-rated generics for Nexium would have launched absent the anti-competitive behavior by the defendants. I have been asked to address three base scenarios. Each scenario assumes a different entry date for the first-to-file generic and the authorized generic. For each of these base scenarios I then add additional generic entrants as described below.

### Scenario 1

#### Scenario 1.A

- A generic with first-to-file status would have launched on August 1, 2008.
- AstraZeneca would have launched an authorized generic on August 1, 2008.

#### Scenario 1.B

- A generic with first-to-file status would have launched on August 1, 2008.
- AstraZeneca would have launched an authorized generic on August 1, 2008.
- A third generic would have launched on August 1, 2009.

#### Scenario 1.C

- A generic with first-to-file status would have launched on August 1, 2008.
- AstraZeneca would have launched an authorized generic on August 1, 2008.
- A third generic would have launched on August 1, 2009.
- A fourth generic would have launched June 6, 2010.

### Scenario 2

#### Scenario 2.A

- A generic with first-to-file status would have launched on December 1, 2010.
- AstraZeneca would have launched an authorized generic on December 1, 2010.

#### Scenario 2.B

- A generic with first-to-file status would have launched on December 1, 2010.
- AstraZeneca would have launched an authorized generic on December 1, 2010.
- A third generic would have launched 180 days later on June 1, 2011.

**Scenario 2.C**

- A generic with first-to-file status would have launched on December 1, 2010.
- AstraZeneca would have launched an authorized generic on December 1, 2010.
- A third generic would have launched 180 days later on June 1, 2011.
- A fourth generic would have launched 180 days later on June 1, 2011.

**Scenario 3**

**Scenario 3.A**

- A generic with first-to-file status would have launched on April 1, 2012.
- AstraZeneca would have launched an authorized generic on April 1, 2012.

**Scenario 3.B**

- A generic with first-to-file status would have launched on April 1, 2012.
- AstraZeneca would have launched an authorized generic on April 1, 2012.
- A third generic would have launched 180 days later on October 1, 2012.

**Scenario 3.C**

- A generic with first-to-file status would have launched on April 1, 2012.
- AstraZeneca would have launched an authorized generic on April 1, 2012.
- A third generic would have launched 180 days later on October 1, 2012.
- A fourth generic would have launched 180 days later on October 1, 2012.

3. Based on these scenarios, I calculate damages using the methodology put forth in my July 26, 2013 declaration. A summary of my overcharge calculations for the above listed scenarios are presented below in Table 1. My damage calculations appear in Attachment C.<sup>3</sup> Attachment D presents a list of direct purchasers for each of the three scenarios above.

---

<sup>3</sup> Note that counsel has asked that I calculate damages through the trial which is assumed to be February 2014.



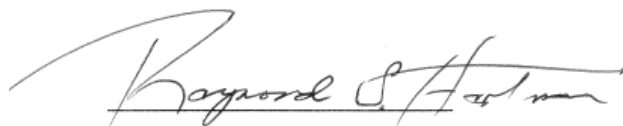
**TABLE 1**  
**SUMMARY OF OVERCHARGES TO THE CLASS OF DIRECT PURCHASERS**

		<i>But-For-Entry Date</i>	<i>Overcharges</i>
<b>Scenario 1:</b>	1.A	August 1, 2008	\$16.7 billion
	1.B	August 1, 2008	\$21.7 billion
	1.C	August 1, 2008	\$23.3 billion
<b>Scenario 2:</b>	2.A	December 2010	\$9.0 billion
	2.B	December 2010	\$12.3 billion
	2.C	December 2010	\$13.5 billion
<b>Scenario 3:</b>	3.A	April 2012	\$4.9 billion
	3.B	April 2012	\$6.4 billion
	3.C	April 2012	\$6.8 billion

4. I have been requested by counsel to undertake mathematical calculations to modify the damages calculations to accommodate the potential that the jury selects “but-for” entry dates that differ from the above. Changes to these scenarios can be applied to my methodology as shown in Attachments E through J. In those attachments, beginning with the assumptions described above for each scenario, I calculate damages based on a variety of different alternative dates of “but-for” generic launch from January 1, 2009 through January 1, 2012. The analysis is the same as discussed above. My methodology can be used to accommodate, for example, any “but-for” entry dates and patterns of but-for generic entry that the fact finder may conclude are likely.

5. Note, as I indicated in my July 26, 2013 class certification declaration, the calculation of direct purchaser overcharges is based on certain assumptions as to how the law requires the estimation of overcharges to be calculated. For example, so called “generic bypass” units are to be included in the estimation. Of course, if the Court rules on a matter of law that differs from

my assumptions, these calculations can be modified to accommodate that change. Doing so is a mathematical exercise.

A handwritten signature in cursive script, reading "Raymond S. Hartman". The signature is written in black ink and is positioned above the printed name.

Raymond S. Hartman, Ph.D.

August 23, 2013

**Attachment C**

**Attachment C.1: Summary of Nexium Direct Customer Sales**

Quarter	For Scenarios 1.A, 1.B, 1.C, 3.A, 3.B and 3.C			For Scenarios 2.A, 2.B and 2.C		
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)
2008 Pre Aug.	368,075,379	\$1,568,812,731	\$4.26			
2008Q2 Post Aug.	233,117,526	\$996,829,539	\$4.28			
2008Q4	393,177,650	\$1,729,597,621	\$4.40			
2009Q1	344,590,681	\$1,549,462,904	\$4.50			
2009Q2	370,370,888	\$1,670,966,347	\$4.51			
2009Q3	358,376,852	\$1,616,747,386	\$4.51			
2009Q4	358,556,485	\$1,659,417,762	\$4.63			
2010Q1	337,613,503	\$1,606,829,125	\$4.76			
2010Q2	342,909,973	\$1,645,068,869	\$4.80			
2010Q3	336,185,463	\$1,578,344,774	\$4.69	335,276,615	\$1,601,574,577	\$4.78
2010Q4	340,358,296	\$1,643,480,690	\$4.83	129,407,102	\$627,781,804	\$4.85
2011Q1	303,971,918	\$1,526,485,048	\$5.02	303,971,918	\$1,526,485,048	\$5.02
2011Q2	319,678,317	\$1,611,187,175	\$5.04	319,678,317	\$1,611,187,175	\$5.04
2011Q3	312,062,380	\$1,520,652,211	\$4.87	312,062,380	\$1,520,652,211	\$4.87
2011Q4	321,987,932	\$1,641,033,084	\$5.10	321,987,932	\$1,641,033,084	\$5.10
2012Q1	264,078,806	\$1,359,897,049	\$5.15	264,078,806	\$1,359,897,049	\$5.15
2012Q2	283,790,829	\$1,482,450,406	\$5.22	283,790,829	\$1,482,450,406	\$5.22
2012Q3	286,007,757	\$1,495,738,212	\$5.23	286,007,757	\$1,495,738,212	\$5.23
2012Q4	296,550,930	\$1,616,111,381	\$5.45	296,550,930	\$1,616,111,381	\$5.45
2013Q1	248,813,414	\$1,376,691,190	\$5.53	248,813,414	\$1,376,691,190	\$5.53
2013Q2	284,597,553	\$1,634,614,615	\$5.74	284,597,553	\$1,634,614,615	\$5.74
2013Q3	262,674,071	\$1,518,078,347	\$5.78	262,674,071	\$1,518,078,347	\$5.78
2013Q4	257,215,820	\$1,514,653,791	\$5.89	257,215,820	\$1,514,653,791	\$5.89
2014Q1	167,838,379	\$1,006,690,517	\$6.00	167,838,379	\$1,006,690,517	\$6.00
Total	7,392,600,800	\$36,569,840,773		4,073,951,821	\$21,533,639,408	

Notes:

1 Source: AstraZeneca transactional sales data including AZ-NX-MDL-00968558.txt (customer detail), AZ-NX-MDL-00968559.txt (direct sales), and AZ-NX-MDL-00968560.txt (chargebacks).

The period "2008 Pre Aug." refers to May 1 through July 31, 2008.

Oral suspension NDCs have been excluded. The IV form was not included in the raw transactional data.

Records with zero price and non-zero quantity have been excluded.

Outlier records with an invoice date of May 19, 2008, negative quantity and an SAP order reason code of "Z29" have been excluded.

Excludes customers with zero or negative total net sales. Excludes "US AF-USAF ACADEMY, CO".

Since the data in 2013Q2 only extend through May, that quarter is adjusted by multiplying by 3/2.

2013Q3 through 2014Q1 are estimated by taking the linear trend from the previous 8 quarters of available data. 2014Q1 is multiplied by 2/3 to reflect a total only through February 2014.

Through 2013Q2, see notes above. From 2013Q3-2014Q1, = Column 1 \* Column 3.

3 Through 2013Q2, = Column 2 / Column 1. From 2012Q3-2014Q1, based on the linear trend from the previous 8 quarters of available data.

4 See notes for Column 1 above. 2010 Pre Dec. includes September, October and November 2010.

5 See notes for Column 2 above.

6 See notes for Column 3 above.

## Attachment C.2.a: Yardstick Calculations for Scenarios 1.A, 2.A and 3.A

Quarter	Prevacid			Lansoprazole			Yardsticks Inputs			Final Yardsticks		
	Extended Units	Dollars	Price (\$/EU)	Extended Units	Dollars	Price (\$/EU)	Generic Market Share	Generic Price Change	Brand Price Change	Number of Generics	Generic Price Change	Brand Price Change
0	136,872,443	\$636,409,983	\$4.65									
1	42,894,565	\$195,422,857	\$4.56	78,381,720	\$141,533,738	\$1.81	64.6%	-61.2%	-2.0%	3	-40.8%	-2.0%
2	14,706,983	\$64,037,087	\$4.35	92,295,550	\$157,102,854	\$1.70	86.3%	-63.4%	-6.4%	3	-42.3%	-6.4%
3	10,898,260	\$49,873,528	\$4.58	85,800,550	\$146,170,833	\$1.70	88.7%	-63.4%	-1.6%	3	-42.3%	-1.6%
4	9,121,110	\$43,440,243	\$4.76	86,162,290	\$144,112,624	\$1.67	90.4%	-64.0%	2.4%	3	-42.3%	2.4%
5	7,339,160	\$34,045,546	\$4.64	88,992,030	\$146,280,892	\$1.64	92.4%	-64.6%	-0.2%	4	-42.3%	-0.2%
6	6,046,040	\$28,975,127	\$4.79	88,465,180	\$139,015,772	\$1.57	93.6%	-66.2%	3.1%	4	-42.3%	3.1%
7	5,067,620	\$27,035,196	\$5.33	88,387,110	\$129,412,967	\$1.46	94.6%	-68.5%	14.7%	4	-42.3%	14.7%
8	4,355,650	\$23,515,693	\$5.40	90,154,510	\$119,409,121	\$1.32	95.4%	-71.5%	16.1%	4	-42.3%	16.1%
9	3,160,790	\$17,540,254	\$5.55	90,472,690	\$118,296,822	\$1.31	96.6%	-71.9%	19.3%	4	-42.3%	19.3%
10	3,008,120	\$16,620,485	\$5.53	87,211,070	\$115,779,417	\$1.33	96.7%	-71.4%	18.8%	4	-42.3%	18.8%
11	2,762,430	\$16,543,298	\$5.99	99,922,614	\$111,870,973	\$1.12	97.3%	-75.9%	28.8%	4	-42.3%	28.8%
12	2,609,730	\$15,752,281	\$6.04	88,215,620	\$104,993,978	\$1.19	97.1%	-74.4%	29.8%	5	-42.3%	29.8%
13	1,982,360	\$12,010,968	\$6.06	62,137,066	\$73,753,582	\$1.19	96.9%	-74.5%	30.3%	5	-42.3%	30.3%
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## Notes:

1-2 Source: IMS NSP data. Excludes oral suspension and IV forms.

3 = Column 2 / Column 1.

4-5 Source: IMS NSP data. Excludes oral suspension and IV forms.

6 = Column 5 / Column 4.

7 = Column 4 / (Column 1 + Column 4).

8 = (Column 6 - Column 3 in Period 0) / Column 3 in Period 0.

9 = (Column 3 - Column 3 in Period 0) / Column 3 in Period 0.

10 Number of significant generic manufacturers.

11 Periods 1-13, = Column 7. Period 14 onward, = Column 7 in Period 13.

12 Periods 1 and 2, = Column 8 \* (2/3); Period 3 onward = Column 12 Period 2.

13 Period 1-13, = Column 9. Thereafter, based on the linear trend from the previous 8 quarters of available data.

14 Number of generics in the but-for scenario.

## Attachment C.2.b: Yardstick Calculations for Scenario 1.B

Quarter	Prevacid			Lansoprazole			Yardsticks Inputs			Final Yardsticks		
	Extended Units	Dollars	Price (\$/EU)	Extended Units	Dollars	Price (\$/EU)	Generic Market Share	Generic Price Change	Brand Price Change	Number of Generics	Generic Price Change	Brand Price Change
0	136,872,443	\$636,409,983	\$4.65									
1	42,894,565	\$195,422,857	\$4.56	78,381,720	\$141,533,738	\$1.81	64.6%	-61.2%	-2.0%	3	-40.8%	-2.0%
2	14,706,983	\$64,037,087	\$4.35	92,295,550	\$157,102,854	\$1.70	86.3%	-63.4%	-6.4%	3	-42.3%	-6.4%
3	10,898,260	\$49,873,528	\$4.58	85,800,550	\$146,170,833	\$1.70	88.7%	-63.4%	-1.6%	3	-42.3%	-1.6%
4	9,121,110	\$43,440,243	\$4.76	86,162,290	\$144,112,624	\$1.67	90.4%	-64.0%	2.4%	3	-42.3%	2.4%
5	7,339,160	\$34,045,546	\$4.64	88,992,030	\$146,280,892	\$1.64	92.4%	-64.6%	-0.2%	4	-63.4%	-0.2%
6	6,046,040	\$28,975,127	\$4.79	88,465,180	\$139,015,772	\$1.57	93.6%	-66.2%	3.1%	4	-64.0%	3.1%
7	5,067,620	\$27,035,196	\$5.33	88,387,110	\$129,412,967	\$1.46	94.6%	-68.5%	14.7%	4	-64.0%	14.7%
8	4,355,650	\$23,515,693	\$5.40	90,154,510	\$119,409,121	\$1.32	95.4%	-71.5%	16.1%	4	-64.0%	16.1%
9	3,160,790	\$17,540,254	\$5.55	90,472,690	\$118,296,822	\$1.31	96.6%	-71.9%	19.3%	4	-64.0%	19.3%
10	3,008,120	\$16,620,485	\$5.53	87,211,070	\$115,779,417	\$1.33	96.7%	-71.4%	18.8%	4	-64.0%	18.8%
11	2,762,430	\$16,543,298	\$5.99	99,922,614	\$111,870,973	\$1.12	97.3%	-75.9%	28.8%	4	-64.0%	28.8%
12	2,609,730	\$15,752,281	\$6.04	88,215,620	\$104,993,978	\$1.19	97.1%	-74.4%	29.8%	5	-64.0%	29.8%
13	1,982,360	\$12,010,968	\$6.06	62,137,066	\$73,753,582	\$1.19	96.9%	-74.5%	30.3%	5	-64.0%	30.3%
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## Notes:

- 1-2 Source: IMS NSP data. Excludes oral suspension and IV forms.  
3 = Column 2 / Column 1.  
4-5 Source: IMS NSP data. Excludes oral suspension and IV forms.  
6 = Column 5 / Column 4.  
7 = Column 4 / (Column 1 + Column 4).  
8 = (Column 6 - Column 3 in Period 0) / Column 3 in Period 0.  
9 = (Column 3 - Column 3 in Period 0) / Column 3 in Period 0.  
10 Number of significant generic manufacturers.  
11 Periods 1-13, = Column 7. Period 14 onward, = Column 7 in Period 13.  
12 Periods 1 and 2, = Column 8, Period 3; Period 5 = Column 8, Period 2; Periods 6-16, = Column 8, Period 4.  
13 Period 1-13, = Column 9. Thereafter, based on the linear trend from the previous 8 quarters of available data.  
14 Number of generics in the but-for scenario.

**Attachment C.2.c: Yardstick Calculations for Scenarios 2.B and 3.B**

Quarter	Prevacid			Lansoprazole			Yardsticks Inputs			Final Yardsticks		
	Extended Units	Dollars	Price (\$/EU)	Extended Units	Dollars	Price (\$/EU)	Generic Market Share	Generic Price Change	Brand Price Change	Number of Generics	Generic Price Change	Brand Price Change
0	136,872,443	\$636,409,983	\$4.65									
1	42,894,565	\$195,422,857	\$4.56	78,381,720	\$141,533,738	\$1.81	64.6%	-61.2%	-2.0%	3	-40.8%	-2.0%
2	14,706,983	\$64,037,087	\$4.35	92,295,550	\$157,102,854	\$1.70	86.3%	-63.4%	-6.4%	3	-42.3%	-6.4%
3	10,898,260	\$49,873,528	\$4.58	85,800,550	\$146,170,833	\$1.70	88.7%	-63.4%	-1.6%	3	-63.4%	-1.6%
4	9,121,110	\$43,440,243	\$4.76	86,162,290	\$144,112,624	\$1.67	90.4%	-64.0%	2.4%	3	-64.0%	2.4%
5	7,339,160	\$34,045,546	\$4.64	88,992,030	\$146,280,892	\$1.64	92.4%	-64.6%	-0.2%	4	-64.0%	-0.2%
6	6,046,040	\$28,975,127	\$4.79	88,465,180	\$139,015,772	\$1.57	93.6%	-66.2%	3.1%	4	-64.0%	3.1%
7	5,067,620	\$27,035,196	\$5.33	88,387,110	\$129,412,967	\$1.46	94.6%	-68.5%	14.7%	4	-64.0%	14.7%
8	4,355,650	\$23,515,693	\$5.40	90,154,510	\$119,409,121	\$1.32	95.4%	-71.5%	16.1%	4	-64.0%	16.1%
9	3,160,790	\$17,540,254	\$5.55	90,472,690	\$118,296,822	\$1.31	96.6%	-71.9%	19.3%	4	-64.0%	19.3%
10	3,008,120	\$16,620,485	\$5.53	87,211,070	\$115,779,417	\$1.33	96.7%	-71.4%	18.8%	4	-64.0%	18.8%
11	2,762,430	\$16,543,298	\$5.99	99,922,614	\$111,870,973	\$1.12	97.3%	-75.9%	28.8%	4	-64.0%	28.8%
12	2,609,730	\$15,752,281	\$6.04	88,215,620	\$104,993,978	\$1.19	97.1%	-74.4%	29.8%	5	-64.0%	29.8%
13	1,982,360	\$12,010,968	\$6.06	62,137,066	\$73,753,582	\$1.19	96.9%	-74.5%	30.3%	5	-64.0%	30.3%
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**Notes:**

1-2 Source: IMS NSP data. Excludes oral suspension and IV forms.

3 = Column 2 / Column 1.

4-5 Source: IMS NSP data. Excludes oral suspension and IV forms.

6 = Column 5 / Column 4.

7 = Column 4 / (Column 1 + Column 4).

8 = (Column 6 - Column 3 in Period 0) / Column 3 in Period 0.

9 = (Column 3 - Column 3 in Period 0) / Column 3 in Period 0.

10 Number of significant generic manufacturers.

11 Periods 1-13, = Column 7. Period 14 onward, = Column 7 in Period 13.

12 Periods 1 and 2, = Column 8 \* (2/3); Periods 3-4, = Column 8; Period 5 and beyond, = Column 8, Period 4.

13 Period 1-13, = Column 9. Thereafter, based on the linear trend from the previous 8 quarters of available data.

14 Number of generics in the but-for scenario.

## Attachment C.2.d: Yardstick Calculations for Scenario 1.C

Quarter	Prevacid			Lansoprazole			Yardsticks Inputs			Final Yardsticks		
	Extended Units	Dollars	Price (\$/EU)	Extended Units	Dollars	Price (\$/EU)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Market Share	Generic Price Change	Brand Price Change
0	136,872,443	\$636,409,983	\$4.65									
1	42,894,565	\$195,422,857	\$4.56	78,381,720	\$141,533,738	\$1.81	64.6%	-61.2%	-2.0%	64.6%	-40.8%	-2.0%
2	14,706,983	\$64,037,087	\$4.35	92,295,550	\$157,102,854	\$1.70	86.3%	-63.4%	-6.4%	86.3%	-42.3%	-6.4%
3	10,898,260	\$49,873,528	\$4.58	85,800,550	\$146,170,833	\$1.70	88.7%	-63.4%	-1.6%	88.7%	-42.3%	-1.6%
4	9,121,110	\$43,440,243	\$4.76	86,162,290	\$144,112,624	\$1.67	90.4%	-64.0%	2.4%	90.4%	-42.3%	2.4%
5	7,339,160	\$34,045,546	\$4.64	88,992,030	\$146,280,892	\$1.64	92.4%	-64.6%	-0.2%	92.4%	-63.4%	-0.2%
6	6,046,040	\$28,975,127	\$4.79	88,465,180	\$139,015,772	\$1.57	93.6%	-66.2%	3.1%	93.6%	-64.0%	3.1%
7	5,067,620	\$27,035,196	\$5.33	88,387,110	\$129,412,967	\$1.46	94.6%	-68.5%	14.7%	94.6%	-64.0%	14.7%
8	4,355,650	\$23,515,693	\$5.40	90,154,510	\$119,409,121	\$1.32	95.4%	-71.5%	16.1%	95.4%	-64.0%	16.1%
9	3,160,790	\$17,540,254	\$5.55	90,472,690	\$118,296,822	\$1.31	96.6%	-71.9%	19.3%	96.6%	-64.6%	19.3%
10	3,008,120	\$16,620,485	\$5.53	87,211,070	\$115,779,417	\$1.33	96.7%	-71.4%	18.8%	96.7%	-66.2%	18.8%
11	2,762,430	\$16,543,298	\$5.99	99,922,614	\$111,870,973	\$1.12	97.3%	-75.9%	28.8%	97.3%	-68.5%	28.8%
12	2,609,730	\$15,752,281	\$6.04	88,215,620	\$104,993,978	\$1.19	97.1%	-74.4%	29.8%	97.1%	-71.5%	29.8%
13	1,982,360	\$12,010,968	\$6.06	62,137,066	\$73,753,582	\$1.19	96.9%	-74.5%	30.3%	96.9%	-71.9%	30.3%
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## Notes:

- 1-2 Source: IMS NSP data. Excludes oral suspension and IV forms.  
 3 = Column 2 / Column 1.  
 4-5 Source: IMS NSP data. Excludes oral suspension and IV forms.  
 6 = Column 5 / Column 4.  
 7 = Column 4 / (Column 1 + Column 4).  
 8 = (Column 6 - Column 3 in Period 0) / Column 3 in Period 0.  
 9 = (Column 3 - Column 3 in Period 0) / Column 3 in Period 0.  
 10 Number of significant generic manufacturers.  
 11 Periods 1-13, = Column 7. Period 14 onward, = Column 7 in Period 13.  
 12 Periods 1 and 2, = Column 8 \* (2/3); Periods 3-4, = Column 12, Period 2; Period 5, = Column 8, Period 4; Period 8, Period 4; Period 9-15, = Column 8 starting in Period 5; Period 16 onward, = Column 8 in Period 11.  
 13 Period 1-13, = Column 9. Thereafter, based on the linear trend from the previous 8 quarters of available data.  
 14 Number of generics in the but-for scenario.



## Attachment C.2.e: Yardstick Calculations for Scenarios 2.C and 3.C

Quarter	1			2			3			4			5			6			7			8			9			10			11			12			13			14		
	Prevacid			Lansoprazole																					Yardsticks Inputs						Final Yardsticks											
	Extended Units	Dollars	Price (\$/EU)	Extended Units	Dollars	Price (\$/EU)	Generic Market Share	Generic Price Change	Brand Price Change	Number of Generics	Generic Market Share	Generic Price Change	Brand Price Change	Number of Generics	Generic Market Share	Generic Price Change	Brand Price Change	Number of Generics	Generic Market Share	Generic Price Change	Brand Price Change	Number of Generics	Generic Market Share	Generic Price Change	Brand Price Change	Number of Generics	Generic Market Share	Generic Price Change	Brand Price Change	Number of Generics	Generic Market Share	Generic Price Change	Brand Price Change	Number of Generics								
0	136,872,443	\$636,409,983	\$4.65																																							
1	42,894,565	\$195,422,857	\$4.56	78,381,720	\$141,533,738	\$1.81	64.6%	-61.2%	-2.0%	3	64.6%	-40.8%	-2.0%	3	64.6%	-40.8%	-2.0%	3	64.6%	-40.8%	-2.0%	3	64.6%	-40.8%	-2.0%	3	64.6%	-40.8%	-2.0%	3	64.6%	-40.8%	-2.0%	3	64.6%	-40.8%	-2.0%	3				
2	14,706,983	\$64,037,087	\$4.35	92,295,550	\$157,102,854	\$1.70	86.3%	-63.4%	-6.4%	3	86.3%	-42.3%	-6.4%	3	86.3%	-42.3%	-6.4%	3	86.3%	-42.3%	-6.4%	3	86.3%	-42.3%	-6.4%	3	86.3%	-42.3%	-6.4%	3	86.3%	-42.3%	-6.4%	3	86.3%	-42.3%	-6.4%	3				
3	10,898,260	\$49,873,528	\$4.58	85,800,550	\$146,170,833	\$1.70	88.7%	-63.4%	-1.6%	3	88.7%	-64.6%	-1.6%	3	88.7%	-64.6%	-1.6%	3	88.7%	-64.6%	-1.6%	3	88.7%	-64.6%	-1.6%	3	88.7%	-64.6%	-1.6%	3	88.7%	-64.6%	-1.6%	3	88.7%	-64.6%	-1.6%	3				
4	9,121,110	\$43,440,243	\$4.76	86,162,290	\$144,112,624	\$1.67	90.4%	-64.0%	2.4%	3	90.4%	-66.2%	2.4%	3	90.4%	-66.2%	2.4%	3	90.4%	-66.2%	2.4%	3	90.4%	-66.2%	2.4%	3	90.4%	-66.2%	2.4%	3	90.4%	-66.2%	2.4%	3	90.4%	-66.2%	2.4%	3				
5	7,339,160	\$34,045,546	\$4.64	88,992,030	\$146,280,892	\$1.64	92.4%	-64.6%	-0.2%	4	92.4%	-68.5%	-0.2%	4	92.4%	-68.5%	-0.2%	4	92.4%	-68.5%	-0.2%	4	92.4%	-68.5%	-0.2%	4	92.4%	-68.5%	-0.2%	4	92.4%	-68.5%	-0.2%	4	92.4%	-68.5%	-0.2%	4				
6	6,046,040	\$28,975,127	\$4.79	88,465,180	\$139,015,772	\$1.57	93.6%	-66.2%	3.1%	4	93.6%	-71.5%	3.1%	4	93.6%	-71.5%	3.1%	4	93.6%	-71.5%	3.1%	4	93.6%	-71.5%	3.1%	4	93.6%	-71.5%	3.1%	4	93.6%	-71.5%	3.1%	4	93.6%	-71.5%	3.1%	4				
7	5,067,620	\$27,035,196	\$5.33	88,387,110	\$129,412,967	\$1.46	94.6%	-68.5%	14.7%	4	94.6%	-71.9%	14.7%	4	94.6%	-71.9%	14.7%	4	94.6%	-71.9%	14.7%	4	94.6%	-71.9%	14.7%	4	94.6%	-71.9%	14.7%	4	94.6%	-71.9%	14.7%	4	94.6%	-71.9%	14.7%	4				
8	4,355,650	\$23,515,693	\$5.40	90,154,510	\$119,409,121	\$1.32	95.4%	-71.5%	16.1%	4	95.4%	-75.9%	16.1%	4	95.4%	-75.9%	16.1%	4	95.4%	-75.9%	16.1%	4	95.4%	-75.9%	16.1%	4	95.4%	-75.9%	16.1%	4	95.4%	-75.9%	16.1%	4	95.4%	-75.9%	16.1%	4				
9	3,160,790	\$17,540,254	\$5.55	90,472,690	\$118,296,822	\$1.31	96.6%	-71.9%	19.3%	4	96.6%	-75.9%	19.3%	4	96.6%	-75.9%	19.3%	4	96.6%	-75.9%	19.3%	4	96.6%	-75.9%	19.3%	4	96.6%	-75.9%	19.3%	4	96.6%	-75.9%	19.3%	4	96.6%	-75.9%	19.3%	4				
10	3,008,120	\$16,620,485	\$5.53	87,211,070	\$115,779,417	\$1.33	96.7%	-71.4%	18.8%	4	96.7%	-75.9%	18.8%	4	96.7%	-75.9%	18.8%	4	96.7%	-75.9%	18.8%	4	96.7%	-75.9%	18.8%	4	96.7%	-75.9%	18.8%	4	96.7%	-75.9%	18.8%	4	96.7%	-75.9%	18.8%	4				
11	2,762,430	\$16,543,298	\$5.99	99,922,614	\$111,870,973	\$1.12	97.3%	-75.9%	28.8%	4	97.3%	-75.9%	28.8%	4	97.3%	-75.9%	28.8%	4	97.3%	-75.9%	28.8%	4	97.3%	-75.9%	28.8%	4	97.3%	-75.9%	28.8%	4	97.3%	-75.9%	28.8%	4	97.3%	-75.9%	28.8%	4				
12	2,609,730	\$15,752,281	\$6.04	88,215,620	\$104,993,978	\$1.19	97.1%	-74.4%	29.8%	5	97.1%	-75.9%	29.8%	5	97.1%	-75.9%	29.8%	5	97.1%	-75.9%	29.8%	5	97.1%	-75.9%	29.8%	5	97.1%	-75.9%	29.8%	5	97.1%	-75.9%	29.8%	5	97.1%	-75.9%	29.8%	5				
13	1,982,360	\$12,010,968	\$6.06	62,137,066	\$73,753,582	\$1.19	96.9%	-74.5%	30.3%	5	96.9%	-75.9%	30.3%	5	96.9%	-75.9%	30.3%	5	96.9%	-75.9%	30.3%	5	96.9%	-75.9%	30.3%	5	96.9%	-75.9%	30.3%	5	96.9%	-75.9%	30.3%	5	96.9%	-75.9%	30.3%	5				
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## Notes:

- 1-2 Source: IMS NSP data. Excludes oral suspension and IV forms.  
 3 = Column 2 / Column 1.  
 4-5 Source: IMS NSP data. Excludes oral suspension and IV forms.  
 6 = Column 5 / Column 4.  
 7 = Column 4 / (Column 1 + Column 4).  
 8 = (Column 6 - Column 3 in Period 0) / Column 3 in Period 0.  
 9 = (Column 3 - Column 3 in Period 0) / Column 3 in Period 0.  
 10 Number of significant generic manufacturers.  
 11 Periods 1 - 13, = Column 7; Period 14 onward, = Column 7 in Period 13.  
 12 Periods 1 and 2, = Column 8 \* (2/3); Periods 3-9, = Column 8 starting in Period 5; Period 10 onward, = Column 8 in Period 11.  
 13 Periods 1-13, = Column 9; Period 14 onward, based on the trend from the previous 8 quarters of available data.  
 14 Number of generics in the but-for scenario.

**Attachment C.3: Nexium Direct Purchaser Overcharges Assuming Generic Launch in August 2008**

Scenario 1.A

Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases		Overcharges		Total Overcharges
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Price (\$/Pill)	
2008 Pre Aug.	368,075,379	\$1,568,812,731	\$4.26	64.6%	-40.8%	-2.0%	150,665,504	\$2.52	\$263,944,764	\$272,176,094
2008Q3 Post Aug.	233,117,526	\$996,829,539	\$4.28	86.3%	-42.3%	-6.4%	339,137,275	\$2.46	\$957,270,996	\$679,301,048
2008Q4	393,177,650	\$1,729,597,621	\$4.40	88.7%	-42.3%	-1.6%	305,754,227	\$2.46	\$622,386,000	\$634,098,546
2009Q1	344,590,681	\$1,549,462,904	\$4.50	90.4%	-42.3%	2.4%	334,916,720	\$2.46	\$686,796,064	\$691,967,489
2009Q2	370,370,888	\$1,670,966,347	\$4.51	92.4%	-42.3%	-0.2%	331,073,285	\$2.46	\$678,816,023	\$685,886,876
2009Q3	358,376,852	\$1,616,747,386	\$4.51	93.6%	-42.3%	3.1%	335,619,030	\$2.46	\$727,318,533	\$732,708,500
2009Q4	358,556,485	\$1,659,417,762	\$4.63	94.6%	-42.3%	14.7%	319,306,277	\$2.46	\$733,899,622	\$733,899,622
2010Q1	337,613,503	\$1,606,829,125	\$4.76	95.4%	-42.3%	16.1%	327,106,425	\$2.46	\$764,258,899	\$764,258,899
2010Q2	342,909,973	\$1,645,068,869	\$4.80	96.6%	-42.3%	19.3%	324,836,834	\$2.46	\$725,655,502	\$725,655,502
2010Q3	336,185,463	\$1,578,344,774	\$4.69	96.7%	-42.3%	18.8%	329,009,949	\$2.46	\$779,004,318	\$779,004,318
2010Q4	340,358,296	\$1,643,480,690	\$4.83	97.3%	-42.3%	28.8%	295,794,475	\$2.46	\$757,482,539	\$757,482,539
2011Q1	303,971,918	\$1,526,485,048	\$5.02	97.1%	-42.3%	29.8%	310,492,841	\$2.46	\$800,783,053	\$800,783,053
2011Q2	319,678,317	\$1,611,187,175	\$5.04	96.9%	-42.3%	30.3%	302,414,447	\$2.46	\$729,410,178	\$729,410,178
2011Q3	312,062,380	\$1,520,652,211	\$4.87	96.9%	-42.3%	36.4%	312,033,133	\$2.46	\$822,398,113	\$822,398,113
2011Q4	321,987,932	\$1,641,033,084	\$5.10	96.9%	-42.3%	40.0%	255,914,365	\$2.46	\$688,059,666	\$688,059,666
2012Q1	264,078,806	\$1,359,897,049	\$5.15	96.9%	-42.3%	43.6%	277,165,345	\$2.46	\$759,813,449	\$759,813,449
2012Q2	283,790,829	\$1,482,450,406	\$5.22	96.9%	-42.3%	50.8%	287,382,559	\$2.46	\$767,403,352	\$767,403,352
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.9%	-42.3%	54.5%	241,120,928	\$2.46	\$858,910,875	\$858,910,875
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.9%	-42.3%	58.1%	275,798,740	\$2.46	\$905,349,311	\$905,349,311
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-42.3%	61.7%	254,553,059	\$2.46	\$844,700,636	\$844,700,636
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-42.3%	65.3%	249,263,559	\$2.46	\$854,399,180	\$854,399,180
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-42.3%	68.9%	162,649,373	\$2.46	\$575,294,108	\$575,294,108
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-42.3%					
2014Q1	167,838,379	\$1,006,690,517	\$6.00							

Total

\$16,744,095,757

\$59,606,173

\$16,803,701,930

Adjustment Due to Statute of Limitations:

\$116,009,483

Total Damages to the Class:

\$16,687,692,448

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2008 Pre Aug. \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2008 Pre Aug. \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12. Due to the statute of limitations, damages from 8/1/2008 through 8/26/2008 are deducted.

Privileged and Confidential: Subject to Court Order

# **Attachment C.4: Nexium Direct Purchaser Overcharges Assuming Generic Launch in August 2008**

Scenario 1.B

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges		
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges
2008 Pre Aug.	368,075,379	\$1,568,812,731	\$4.26	64.6%	-40.8%	-2.0%	150,665,504	\$2.52	82,452,021	\$4.18	\$263,944,764	\$8,231,330
2008Q3 Post Aug.	233,117,526	\$996,829,539	\$4.28	86.3%	-42.3%	-6.4%	339,137,275	\$2.46	54,040,375	\$3.99	\$657,270,996	\$22,030,052
2008Q4	393,177,650	\$1,729,597,621	\$4.40	88.7%	-42.3%	-1.6%	305,754,227	\$2.46	38,836,453	\$4.19	\$622,386,000	\$11,712,546
2009Q1	344,590,681	\$1,549,462,904	\$4.50	90.4%	-42.3%	2.4%	334,916,720	\$2.46	35,454,167	\$4.37	\$686,796,064	\$5,171,425
2009Q2	370,370,888	\$1,670,966,347	\$4.51	92.4%	-63.4%	-0.2%	331,073,285	\$1.56	27,303,567	\$4.25	\$976,551,689	\$7,070,853
2009Q3	358,376,852	\$1,616,747,386	\$4.51	93.6%	-64.0%	3.1%	335,619,030	\$1.53	22,937,455	\$4.39	\$1,038,691,715	\$5,389,967
2009Q4	358,556,485	\$1,659,417,762	\$4.63	94.6%	-64.0%	14.7%	319,306,277	\$1.53	18,307,227	\$4.89	\$1,030,138,519	\$0
2010Q1	337,613,503	\$1,606,829,125	\$4.76	95.4%	-64.0%	16.1%	327,106,425	\$1.53	15,803,548	\$4.95	\$1,067,734,446	\$0
2010Q2	342,909,973	\$1,645,068,869	\$4.80	96.6%	-64.0%	19.3%	324,836,834	\$1.53	11,348,629	\$5.09	\$1,027,025,418	\$0
2010Q3	336,185,463	\$1,578,344,774	\$4.89	96.7%	-64.0%	18.8%	329,009,949	\$1.53	11,348,346	\$5.06	\$1,084,245,874	\$0
2010Q4	340,358,296	\$1,643,480,690	\$4.83	97.3%	-64.0%	28.8%	295,794,475	\$1.53	8,177,443	\$5.49	\$1,031,908,178	\$0
2011Q1	303,971,918	\$1,526,485,048	\$5.02	97.1%	-64.0%	29.8%	310,492,841	\$1.53	9,185,476	\$5.53	\$1,088,845,216	\$0
2011Q2	319,678,317	\$1,611,187,175	\$5.04	96.9%	-64.0%	30.3%	302,414,447	\$1.53	9,647,934	\$5.55	\$1,009,977,548	\$0
2011Q3	312,062,380	\$1,520,652,211	\$4.87	96.9%	-64.0%	36.4%	312,033,133	\$1.53	9,954,799	\$5.81	\$1,111,889,295	\$0
2011Q4	321,987,932	\$1,641,033,084	\$5.10	96.9%	-64.0%	40.0%	255,914,365	\$1.53	8,164,441	\$5.97	\$925,486,221	\$0
2012Q1	264,078,806	\$1,359,897,049	\$5.15	96.9%	-64.0%	43.6%	277,165,345	\$1.53	8,773,871	\$6.12	\$1,014,962,584	\$0
2012Q2	283,790,829	\$1,482,450,406	\$5.22	96.9%	-64.0%	50.8%	287,382,559	\$1.53	8,842,411	\$6.28	\$1,024,545,671	\$0
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.9%	-64.0%	54.5%	241,120,928	\$1.53	7,692,486	\$6.58	\$1,125,532,293	\$0
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.9%	-64.0%	58.1%	275,798,740	\$1.53	8,161,223,752	\$6.74	\$1,161,223,752	\$0
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-64.0%	61.7%	254,553,059	\$1.53	8,121,011	\$6.89	\$1,080,864,229	\$0
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-64.0%	65.3%	249,263,559	\$1.53	7,952,260	\$7.05	\$1,085,655,398	\$0
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-64.0%	68.9%	162,649,373	\$1.53	5,189,006	\$7.20	\$726,193,337	\$0
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-64.0%							
2014Q1	167,838,379	\$1,006,690,517	\$6.00									

Total

\$21,806,311,616 \$59,606,173 \$21,865,917,789

Adjustment Due to Statute of Limitations: \$116,009,483

Total Damages to the Class: \$21,749,908,306

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.b Column 11.
- 5 = C.2.b Column 12.
- 6 = C.2.b Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2008 Pre Aug. \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2008 Pre Aug. \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12. Due to the statute of limitations, damages from 8/1/2008 through 8/26/2008 are deducted.

Privileged and Confidential: Subject to Court Order

**Attachment C.5: Nexium Direct Purchaser Overcharges Assuming Generic Launch in August 2008**

Scenario 1.C

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2008 Pre Aug.	368,075,379	\$1,568,812,731	\$4.26	64.6%	-40.8%	-2.0%	150,665,504	\$2.52	82,452,021	\$4.18	\$263,944,764	\$8,231,330	\$272,176,094
2008Q3 Post Aug.	233,117,526	\$996,829,539	\$4.28	86.3%	-42.3%	-6.4%	339,137,275	\$2.46	54,040,375	\$3.99	\$657,270,996	\$22,030,052	\$679,301,048
2008Q4	393,177,650	\$1,729,597,621	\$4.40	88.7%	-42.3%	-1.6%	305,754,227	\$2.46	38,836,453	\$4.19	\$622,386,000	\$11,712,546	\$634,098,546
2009Q1	344,590,681	\$1,549,462,904	\$4.50	90.4%	-42.3%	2.4%	334,916,720	\$2.46	35,454,167	\$4.37	\$686,796,064	\$5,171,425	\$691,967,489
2009Q2	370,370,888	\$1,670,966,347	\$4.51	92.4%	-63.4%	-0.2%	331,073,285	\$1.56	27,303,567	\$4.25	\$976,551,689	\$7,070,853	\$983,622,542
2009Q3	358,556,485	\$1,616,747,386	\$4.51	93.6%	-64.0%	3.1%	335,619,030	\$1.53	22,937,455	\$4.39	\$1,038,691,715	\$5,389,967	\$1,044,081,683
2009Q4	358,556,485	\$1,659,417,762	\$4.63	94.6%	-64.0%	14.7%	319,306,277	\$1.53	18,307,227	\$4.89	\$1,030,138,519	\$0	\$1,030,138,519
2010Q1	337,613,503	\$1,606,829,125	\$4.76	95.4%	-64.0%	16.1%	327,106,425	\$1.53	15,803,548	\$4.95	\$1,067,734,446	\$0	\$1,067,734,446
2010Q2	342,909,973	\$1,645,068,869	\$4.80	96.6%	-64.6%	19.3%	324,836,834	\$1.51	11,348,629	\$5.09	\$1,035,606,854	\$0	\$1,035,606,854
2010Q3	336,185,463	\$1,578,344,774	\$4.69	96.7%	-66.2%	18.8%	329,009,949	\$1.44	11,348,346	\$5.06	\$1,114,753,273	\$0	\$1,114,753,273
2010Q4	340,358,296	\$1,643,480,690	\$4.83	96.7%	-66.2%	18.8%	329,009,949	\$1.44	11,348,346	\$5.06	\$1,114,753,273	\$0	\$1,114,753,273
2011Q1	303,971,918	\$1,526,485,048	\$5.02	97.3%	-68.5%	28.8%	295,794,475	\$1.34	8,177,443	\$5.49	\$1,088,417,963	\$0	\$1,088,417,963
2011Q2	319,678,317	\$1,611,187,175	\$5.04	97.1%	-71.5%	29.8%	310,492,841	\$1.21	9,185,476	\$5.53	\$1,187,914,999	\$0	\$1,187,914,999
2011Q3	312,062,380	\$1,520,652,211	\$4.87	96.9%	-71.9%	30.3%	302,414,447	\$1.20	9,647,934	\$5.55	\$1,111,169,178	\$0	\$1,111,169,178
2011Q4	321,987,932	\$1,641,033,084	\$5.10	96.9%	-71.4%	36.4%	312,033,133	\$1.22	9,954,799	\$5.81	\$1,210,568,729	\$0	\$1,210,568,729
2012Q1	264,078,806	\$1,359,897,049	\$5.15	96.9%	-75.9%	40.0%	255,914,365	\$1.03	8,164,441	\$5.97	\$1,055,213,061	\$0	\$1,055,213,061
2012Q2	283,790,829	\$1,482,450,406	\$5.22	96.9%	-75.9%	43.6%	275,016,957	\$1.03	8,773,871	\$6.12	\$1,154,372,816	\$0	\$1,154,372,816
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.9%	-75.9%	47.2%	277,165,345	\$1.03	8,773,871	\$6.12	\$1,154,372,816	\$0	\$1,154,372,816
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.9%	-75.9%	50.8%	287,382,559	\$1.03	9,168,371	\$6.43	\$1,271,210,834	\$0	\$1,271,210,834
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-75.9%	54.5%	241,120,928	\$1.03	7,692,486	\$6.58	\$1,086,670,231	\$0	\$1,086,670,231
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-75.9%	58.1%	275,798,740	\$1.03	8,798,812	\$6.74	\$1,301,030,281	\$0	\$1,301,030,281
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-75.9%	61.7%	254,553,059	\$1.03	8,121,011	\$6.89	\$1,209,901,003	\$0	\$1,209,901,003
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-75.9%	65.3%	249,263,559	\$1.03	7,952,260	\$7.05	\$1,212,010,845	\$0	\$1,212,010,845
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-75.9%	68.9%	162,649,373	\$1.03	5,189,006	\$7.20	\$808,642,750	\$0	\$808,642,750

Total

\$23,356,041,964 \$59,606,173 \$23,415,648,137

Adjustment Due to Statute of Limitations: \$116,009,483

Total Damages to the Class: \$23,299,638,654

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.d Column 11.
- 5 = C.2.d Column 12.
- 6 = C.2.d Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2008 Pre Aug. \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2008 Pre Aug. \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12. Due to the statute of limitations, damages from 8/1/2008 through 8/26/2008 are deducted.

Privileged and Confidential: Subject to Court Order

**Attachment C.6: Nexium Direct Purchaser Overcharges Assuming Generic Launch in December 2010**

Scenario 2.A

Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases		Overcharges		Total Overcharges
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)
2010 Pre Dec.	335,276,615	\$1,601,574,577	\$4.78	64.6%	-40.8%	-2.0%	83,636,724	\$2.83	45,770,377	\$4.68
2010Q4 Post Dec.	129,407,102	\$627,781,804	\$4.85	86.3%	-42.3%	-6.4%	262,192,441	\$2.76	41,779,477	\$4.47
2011Q1	303,971,918	\$1,526,485,048	\$5.02	88.7%	-42.3%	-1.6%	283,649,565	\$2.76	36,028,752	\$4.70
2011Q2	319,678,317	\$1,611,187,175	\$5.04	90.4%	-42.3%	2.4%	282,189,860	\$2.76	29,872,520	\$4.89
2011Q3	312,062,380	\$1,520,652,211	\$4.87	92.4%	-42.3%	-0.2%	297,456,719	\$2.76	24,531,213	\$4.77
2011Q4	321,987,932	\$1,641,033,084	\$5.10	93.6%	-42.3%	3.1%	247,185,245	\$2.76	16,893,561	\$4.92
2012Q1	264,078,806	\$1,359,897,049	\$5.15	94.6%	-42.3%	14.7%	268,402,158	\$2.76	15,388,671	\$5.48
2012Q2	283,790,829	\$1,482,450,406	\$5.22	95.4%	-42.3%	16.1%	272,826,638	\$2.76	13,181,119	\$5.55
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.6%	-42.3%	19.3%	286,540,246	\$2.76	10,010,684	\$5.70
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.7%	-42.3%	18.8%	240,517,389	\$2.76	8,296,024	\$5.68
2013Q1	248,813,414	\$1,376,691,190	\$5.53	97.3%	-42.3%	28.8%	276,941,318	\$2.76	7,656,235	\$6.15
2013Q2	284,597,553	\$1,634,614,615	\$5.74	97.1%	-42.3%	29.8%	255,126,526	\$2.76	7,547,545	\$6.20
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-42.3%	30.3%	249,263,559	\$2.76	7,952,260	\$6.22
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-42.3%	36.4%	162,649,373	\$2.76	5,189,006	\$6.52
2014Q1	167,838,379	\$1,006,690,517	\$6.00							

Total

\$8,973,032,132 \$54,856,048 \$9,027,888,179

Notes:

- 1 = C.1 Column 4.
- 2 = C.1 Column 5.
- 3 = C.1 Column 6.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2010 Pre Dec. \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2010 Pre Dec. \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment C.7: Nexium Direct Purchaser Overcharges Assuming Generic Launch in December 2010**

Scenario 2.B

	1	2	3	4	5	6	7	8	9	10	11	12	13
	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
Quarter	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2010 Pre Dec.	335,276,615	\$1,601,574,577	\$4.78										
2010Q4 Post Dec.	129,407,102	\$627,781,804	\$4.85	64.6%	-40.8%	-2.0%	83,636,724	\$2.83	45,770,377	\$4.68	\$169,129,234	\$7,811,872	\$176,941,106
2011Q1	303,971,918	\$1,526,485,048	\$5.02	86.3%	-42.3%	-6.4%	262,192,441	\$2.76	41,779,477	\$4.47	\$593,518,514	\$22,914,643	\$616,433,157
2011Q2	319,678,317	\$1,611,187,175	\$5.04	88.7%	-63.4%	-1.6%	283,649,565	\$1.75	36,028,752	\$4.70	\$933,151,089	\$12,196,910	\$945,348,000
2011Q3	312,062,380	\$1,520,652,211	\$4.87	90.4%	-64.0%	2.4%	282,189,860	\$1.72	29,872,520	\$4.89	\$890,189,482	\$0	\$890,189,482
2011Q4	321,987,932	\$1,641,033,084	\$5.10	92.4%	-64.0%	-0.2%	297,456,719	\$1.72	24,531,213	\$4.77	\$1,004,877,943	\$8,113,828	\$1,012,991,771
2012Q1	264,078,806	\$1,359,897,049	\$5.15	93.6%	-64.0%	3.1%	247,185,245	\$1.72	16,893,561	\$4.92	\$848,155,216	\$3,818,794	\$851,974,010
2012Q2	283,790,829	\$1,482,450,406	\$5.22	94.6%	-64.0%	14.7%	268,402,158	\$1.72	15,388,671	\$5.48	\$940,859,231	\$0	\$940,859,231
2012Q3	286,007,757	\$1,495,738,212	\$5.23	95.4%	-64.0%	16.1%	272,826,638	\$1.72	13,181,119	\$5.55	\$957,997,307	\$0	\$957,997,307
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.6%	-64.0%	19.3%	286,540,246	\$1.72	10,010,684	\$5.70	\$1,069,184,215	\$0	\$1,069,184,215
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.7%	-64.0%	18.8%	240,517,389	\$1.72	8,296,024	\$5.68	\$917,499,719	\$0	\$917,499,719
2013Q2	284,597,553	\$1,634,614,615	\$5.74	97.3%	-64.0%	28.8%	276,941,318	\$1.72	7,656,235	\$6.15	\$1,114,762,416	\$0	\$1,114,762,416
2013Q3	262,674,071	\$1,518,078,347	\$5.78	97.1%	-64.0%	29.8%	255,126,526	\$1.72	7,547,545	\$6.20	\$1,036,065,914	\$0	\$1,036,065,914
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-64.0%	30.3%	249,263,559	\$1.72	7,952,260	\$6.22	\$1,039,507,524	\$0	\$1,039,507,524
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-64.0%	36.4%	162,649,373	\$1.72	5,189,006	\$6.52	\$696,080,942	\$0	\$696,080,942
Total											\$12,210,978,746	\$54,856,048	\$12,265,834,794

Notes:

- 1 = C.1 Column 4.
- 2 = C.1 Column 5.
- 3 = C.1 Column 6.
- 4 = C.2.c Column 11.
- 5 = C.2.c Column 12.
- 6 = C.2.c Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2010 Pre Dec. \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2010 Pre Dec. \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.



**Attachment C.8: Nexium Direct Purchaser Overcharges Assuming Generic Launch in December 2010**

Scenario 2.C

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2010 Pre Dec.	335,276,615	\$1,601,574,577	\$4.78										
2010Q4 Post Dec.	129,407,102	\$627,781,804	\$4.85	64.6%	-40.8%	-2.0%	83,636,724	\$2.83	45,770,377	\$4.68	\$169,129,234	\$7,811,872	\$176,941,106
2011Q1	303,971,918	\$1,526,485,048	\$5.02	86.3%	-42.3%	-6.4%	262,192,441	\$2.76	41,779,477	\$4.47	\$593,518,514	\$22,914,643	\$616,433,157
2011Q2	319,678,317	\$1,611,187,175	\$5.04	88.7%	-64.6%	-1.6%	283,649,565	\$1.69	36,028,752	\$4.70	\$950,594,659	\$12,196,910	\$962,791,569
2011Q3	312,062,380	\$1,520,652,211	\$4.87	90.4%	-66.2%	2.4%	282,189,860	\$1.61	29,872,520	\$4.89	\$919,515,096	\$0	\$919,515,096
2011Q4	321,987,932	\$1,641,033,084	\$5.10	92.4%	-68.5%	-0.2%	297,456,719	\$1.50	24,531,213	\$4.77	\$1,068,567,312	\$8,113,828	\$1,076,681,140
2012Q1	264,078,806	\$1,359,897,049	\$5.15	93.6%	-71.5%	3.1%	247,185,245	\$1.36	16,893,561	\$4.92	\$936,549,001	\$3,818,794	\$940,367,795
2012Q2	283,790,829	\$1,482,450,406	\$5.22	94.6%	-71.9%	14.7%	268,402,158	\$1.34	15,388,671	\$5.48	\$1,041,514,759	\$0	\$1,041,514,759
2012Q3	286,007,757	\$1,495,738,212	\$5.23	95.4%	-71.4%	16.1%	272,826,638	\$1.36	13,181,119	\$5.55	\$1,054,696,372	\$0	\$1,054,696,372
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.6%	-75.9%	19.3%	286,540,246	\$1.15	10,010,684	\$5.70	\$1,231,975,208	\$0	\$1,231,975,208
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.7%	-75.9%	18.8%	240,517,389	\$1.15	8,296,024	\$5.68	\$1,054,143,926	\$0	\$1,054,143,926
2013Q2	284,597,553	\$1,634,614,615	\$5.74	97.3%	-75.9%	28.8%	276,941,318	\$1.15	7,656,235	\$6.15	\$1,272,100,007	\$0	\$1,272,100,007
2013Q3	262,674,071	\$1,518,078,347	\$5.78	97.1%	-75.9%	29.8%	255,126,526	\$1.15	7,547,545	\$6.20	\$1,181,009,952	\$0	\$1,181,009,952
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-75.9%	30.3%	249,263,559	\$1.15	7,952,260	\$6.22	\$1,181,120,658	\$0	\$1,181,120,658
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-75.9%	36.4%	162,649,373	\$1.15	5,189,006	\$6.52	\$788,486,296	\$0	\$788,486,296
Total											\$13,442,920,993	\$54,856,048	\$13,497,777,040

Notes:

- 1 = C.1 Column 4.
- 2 = C.1 Column 5.
- 3 = C.1 Column 6.
- 4 = C.2.e Column 11.
- 5 = C.2.e Column 12.
- 6 = C.2.e Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2010 Pre Dec. \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2010 Pre Dec. \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment C.9: Nexium Direct Purchaser Overcharges Assuming Generic Launch on April 2012**

Scenario 3.A

Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases		Overcharges		Total Overcharges
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Price (\$/Pill)	
2012Q1	264,078,806	\$1,359,897,049	\$5.15	64.6%	-40.8%	-2.0%	183,416,018	\$3.05	100,374,811	\$5.05
2012Q2	283,790,829	\$1,482,450,406	\$5.22	86.3%	-42.3%	-6.4%	246,697,368	\$2.97	39,310,389	\$4.82
2012Q3	286,007,757	\$1,495,738,212	\$5.23	88.7%	-42.3%	-1.6%	263,128,708	\$2.97	33,422,222	\$5.07
2012Q4	296,550,930	\$1,616,111,381	\$5.45	90.4%	-42.3%	2.4%	224,995,471	\$2.97	23,817,942	\$5.27
2013Q1	248,813,414	\$1,376,691,190	\$5.53	92.4%	-42.3%	-0.2%	262,914,991	\$2.97	21,682,562	\$5.14
2013Q2	284,597,553	\$1,634,614,615	\$5.74	93.6%	-42.3%	3.1%	245,870,373	\$2.97	16,803,697	\$5.31
2013Q3	262,674,071	\$1,518,078,347	\$5.78	94.6%	-42.3%	14.7%	243,268,189	\$2.97	13,947,630	\$5.91
2013Q4	257,215,820	\$1,514,653,791	\$5.89	95.4%	-42.3%	16.1%	160,103,282	\$2.97	7,735,097	\$5.98
2014Q1	167,838,379	\$1,006,690,517	\$6.00							

Total

\$4,794,638,808

\$73,987,262

\$4,868,626,070

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2012Q1 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2012Q1 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.



**Attachment C.10: Nexium Direct Purchaser Overcharges Assuming Generic Launch on April 2012**

Scenario 3.B

Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases				Overcharges		Total Overcharges	
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)			
2012Q1	264,078,806	\$1,359,897,049	\$5.15	64.6%	-40.8%	-2.0%	183,416,018	\$3.05	100,374,811	\$5.05	\$398,743,252	\$17,867,337	\$416,610,589
2012Q2	283,790,829	\$1,482,450,406	\$5.22	86.3%	-42.3%	-6.4%	246,697,368	\$2.97	39,310,389	\$4.82	\$556,645,532	\$16,013,225	\$572,658,757
2012Q3	286,007,757	\$1,495,738,212	\$5.23	88.7%	-63.4%	-1.6%	263,128,708	\$1.89	33,422,222	\$5.07	\$937,503,528	\$12,746,154	\$950,249,682
2012Q4	296,550,930	\$1,616,111,381	\$5.45	90.4%	-64.0%	2.4%	224,995,471	\$1.85	23,817,942	\$5.27	\$828,122,797	\$6,153,293	\$834,276,091
2013Q1	248,813,414	\$1,376,691,190	\$5.53	92.4%	-64.0%	-0.2%	262,914,991	\$1.85	21,682,562	\$5.14	\$1,023,053,188	\$13,138,312	\$1,036,191,501
2013Q2	284,597,553	\$1,634,614,615	\$5.74	93.6%	-64.0%	3.1%	245,870,373	\$1.85	16,803,697	\$5.31	\$965,512,455	\$7,925,119	\$973,437,575
2013Q3	262,674,071	\$1,518,078,347	\$5.78	94.6%	-64.0%	14.7%	243,268,189	\$1.85	13,947,630	\$5.91	\$981,889,494	\$0	\$981,889,494
2013Q4	257,215,820	\$1,514,653,791	\$5.89	95.4%	-64.0%	16.1%	160,103,282	\$1.85	7,735,097	\$5.98	\$663,719,223	\$143,821	\$663,863,044
2014Q1	167,838,379	\$1,006,690,517	\$6.00										
Total											\$6,355,189,470	\$73,987,262	\$6,429,176,732

\$6,355,189,470      \$73,987,262      \$6,429,176,732

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.c Column 11.
- 5 = C.2.c Column 12.
- 6 = C.2.c Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2012Q1 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2012Q1 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment C.11: Nexium Direct Purchaser Overcharges Assuming Generic Launch on April 2012**

Scenario 3.C

Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases				Overcharges			
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges	
2012Q1	264,078,806	\$1,359,897,049	\$5.15	64.6%	-40.8%	-2.0%	183,416,018	\$3.05	100,374,811	\$5.05	\$398,743,252	\$17,867,337	\$416,610,589
2012Q2	283,790,829	\$1,482,450,406	\$5.22	86.3%	-42.3%	-6.4%	246,697,368	\$2.97	39,310,389	\$4.82	\$556,645,532	\$16,013,225	\$572,658,757
2012Q3	286,007,757	\$1,495,738,212	\$5.23	88.7%	-64.6%	-1.6%	263,128,708	\$1.82	33,422,222	\$5.07	\$954,947,687	\$12,746,154	\$967,693,841
2012Q4	296,550,930	\$1,616,111,381	\$5.45	90.4%	-66.2%	2.4%	224,995,471	\$1.74	23,817,942	\$5.27	\$853,329,038	\$6,153,293	\$859,482,331
2013Q1	248,813,414	\$1,376,691,190	\$5.53	92.4%	-68.5%	-0.2%	262,914,991	\$1.62	21,682,562	\$5.14	\$1,083,738,990	\$13,138,312	\$1,096,877,302
2013Q2	284,597,553	\$1,634,614,615	\$5.74	93.6%	-71.5%	3.1%	245,870,373	\$1.47	16,803,697	\$5.31	\$1,060,296,223	\$7,925,119	\$1,068,221,343
2013Q3	262,674,071	\$1,518,078,347	\$5.78	94.6%	-71.9%	14.7%	243,268,189	\$1.45	13,947,630	\$5.91	\$1,080,237,493	\$0	\$1,080,237,493
2013Q4	257,215,820	\$1,514,653,791	\$5.89	95.4%	-71.4%	16.1%	160,103,282	\$1.47	7,735,097	\$5.98	\$724,892,863	\$143,821	\$725,036,684
2014Q1	167,838,379	\$1,006,690,517	\$6.00										
Total											\$6,712,831,078	\$73,987,262	\$6,786,818,340

\$6,712,831,078      \$73,987,262      \$6,786,818,340

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.e Column 11.
- 5 = C.2.e Column 12.
- 6 = C.2.e Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2012Q1 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2012Q1 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment D**

**Attachment D.1: Direct Customer List Under Scenarios 1.A, 1.B and 1.C**

<b>Num.</b>	<b>Customer Name</b>
1	AMERISOURCEBERGEN CORP AMERICAN HEALTH PACKAGING AMERISOURCEBERGEN CORP BELLCO DRUG CORP J M BLANCO
2	BURLINGTON DRUG CO INC
3	CAPITAL WHOLESALE DRUG CO
4	CARDINAL HEALTH INC CARDINAL HEALTH INC DIK DRUG CO INC KINRAY INC
5	CESAR CASTILLO INC
6	DAKOTA DRUG INC
7	DISCOUNT DRUG MART
8	DMS PHARMACEUTICAL GROUP INC
9	DROGUERIA BETANCES INC
10	DROGUERIA CTRL INC/CTRO
11	DROGUERIA DE LA VILLA INC
12	EXPRESS SCRIPTS MEDCO HEALTH SOLUTIONS PRIORITY HEALTHCARE CORP
13	FRANK W KERR CO
14	GOOD SAMARITAN HOSP & HLTH
15	H D SMITH WHLSLE DRUG CO INC
16	HARVARD DRUG GROUP LLC
17	J M SMITH CORP
18	KING DRUG CO OF FLORENCE
19	MCKESSON CORP MC QUEARY BROTHERS DRUG CO INC MCKESSON CORP
20	MIAMI LUKEN INC
21	MORRIS & DICKSON CO LTD INC
22	NORTH CAROLINA MUTUAL WHSLE
23	PHARMACY BUYING ASSOCIATES
24	PRESCRIPTION SUPPLY INC
25	R & S NORTHEAST
26	REBEL DISTRIBUTORS CORP
27	ROCHESTER DRUG COOPERATIVE INC
28	SMITH DRUG COMPANY
29	VALLEY WHLSLE DRUG CO INC
30	VALUE DRUG CO INC
31	WHOLESALE GROUP INC

Note: Parent companies are listed and numbered above, while subsidiary companies are indented.

**Attachment D.2: Direct Customer List Under Scenarios 2.A, 2.B and 2.C**

<b>Num.</b>	<b>Customer Name</b>
1	AMERISOURCEBERGEN CORP AMERICAN HEALTH PACKAGING AMERISOURCEBERGEN CORP BELLCO DRUG CORP J M BLANCO
2	BURLINGTON DRUG CO INC
3	CAPITAL WHOLESALE DRUG CO
4	CARDINAL HEALTH INC CARDINAL HEALTH INC DIK DRUG CO INC KINRAY INC
5	CESAR CASTILLO INC
6	DAKOTA DRUG INC
7	DISCOUNT DRUG MART
8	DMS PHARMACEUTICAL GROUP INC
9	DROGUERIA BETANCES INC
10	DROGUERIA CTRL INC/CTRO
11	DROGUERIA DE LA VILLA INC
12	EXPRESS SCRIPTS MEDCO HEALTH SOLUTIONS
13	FRANK W KERR CO
14	H D SMITH WHLSLE DRUG CO INC
15	HARVARD DRUG GROUP LLC
16	J M SMITH CORP
17	MCKESSON CORP
18	MIAMI LUKEN INC
19	MORRIS & DICKSON CO LTD INC
20	NORTH CAROLINA MUTUAL WHSLE
21	PHARMACY BUYING ASSOCIATES
22	PRESCRIPTION SUPPLY INC
23	R & S NORTHEAST
24	REBEL DISTRIBUTORS CORP
25	ROCHESTER DRUG COOPERATIVE INC
26	SMITH DRUG COMPANY
27	VALLEY WHLSLE DRUG CO INC
28	VALUE DRUG CO INC
29	WHOLESALERS GROUP INC

Note: Parent companies are listed and numbered above, while subsidiary companies are indented.

**Attachment D.3: Direct Customer List Under Scenarios 3.A, 3.B and 3.C**

<b>Num.</b>	<b>Customer Name</b>
1	AMERISOURCEBERGEN CORP
	AMERISOURCEBERGEN CORP
	BELLCO DRUG CORP
	J M BLANCO
2	BURLINGTON DRUG CO INC
3	CAPITAL WHOLESALE DRUG CO
4	CARDINAL HEALTH INC
	CARDINAL HEALTH INC
	DIK DRUG CO INC
5	CESAR CASTILLO INC
6	DAKOTA DRUG INC
7	DISCOUNT DRUG MART
8	DMS PHARMACEUTICAL GROUP INC
9	DROGUERIA BETANCES INC
10	DROGUERIA CTRL INC/CTRO
11	EXPRESS SCRIPTS
	MEDCO HEALTH SOLUTIONS
12	FRANK W KERR CO
13	H D SMITH WHLSLE DRUG CO INC
14	HARVARD DRUG GROUP LLC
15	J M SMITH CORP
16	MCKESSON CORP
17	MIAMI LUKEN INC
18	MORRIS & DICKSON CO LTD INC
19	NORTH CAROLINA MUTUAL WHSLE
20	PHARMACY BUYING ASSOCIATES
21	PRESCRIPTION SUPPLY INC
22	R & S NORTHEAST
23	ROCHESTER DRUG COOPERATIVE INC
24	SMITH DRUG COMPANY
25	VALLEY WHLSLE DRUG CO INC
26	VALUE DRUG CO INC
27	WHOLESALE GROUP INC

Note: Parent companies are listed and numbered above, while subsidiary companies are indented.

**Attachment E**

**Attachment E.1: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2009Q1**

Scenario 1.A

Quarter	1		2		3		4		5		6		7		8		9		10		11		12		13	
	Actual Nexium Purchases		Yardsticks		But-For Purchases		Generic		Generic		Generic		Generic		Generic		Generic		Generic		Generic		Generic		Generic	
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges
2008Q4	393,177,650	\$1,729,597,621	\$4.40	64.6%	-40.8%	-2.0%	222,711,392	\$2.61	121,879,289	\$4.31	\$22,696,713	\$22,696,713	\$22,696,713	\$22,696,713	\$22,696,713	\$22,696,713	\$22,696,713	\$22,696,713	\$22,696,713	\$22,696,713	\$22,696,713	\$22,696,713	\$22,696,713	\$22,696,713	\$22,696,713	\$22,696,713
2009Q1	344,590,681	\$1,549,462,904	\$4.50	86.3%	-42.3%	-6.4%	319,465,192	\$2.54	50,905,695	\$4.12	\$19,960,865	\$19,960,865	\$19,960,865	\$19,960,865	\$19,960,865	\$19,960,865	\$19,960,865	\$19,960,865	\$19,960,865	\$19,960,865	\$19,960,865	\$19,960,865	\$19,960,865	\$19,960,865	\$19,960,865	\$19,960,865
2009Q2	370,370,888	\$1,670,966,347	\$4.51	88.7%	-42.3%	-1.6%	317,986,654	\$2.54	40,390,198	\$4.33	\$7,338,934	\$7,338,934	\$7,338,934	\$7,338,934	\$7,338,934	\$7,338,934	\$7,338,934	\$7,338,934	\$7,338,934	\$7,338,934	\$7,338,934	\$7,338,934	\$7,338,934	\$7,338,934	\$7,338,934	\$7,338,934
2009Q3	358,376,852	\$1,616,747,386	\$4.51	90.4%	-42.3%	2.4%	324,233,265	\$2.54	34,323,220	\$4.51	\$4,193,229	\$4,193,229	\$4,193,229	\$4,193,229	\$4,193,229	\$4,193,229	\$4,193,229	\$4,193,229	\$4,193,229	\$4,193,229	\$4,193,229	\$4,193,229	\$4,193,229	\$4,193,229	\$4,193,229	\$4,193,229
2009Q4	358,556,485	\$1,659,417,762	\$4.63	92.4%	-42.3%	-0.2%	311,891,829	\$2.54	25,721,675	\$4.39	\$9,530,902	\$9,530,902	\$9,530,902	\$9,530,902	\$9,530,902	\$9,530,902	\$9,530,902	\$9,530,902	\$9,530,902	\$9,530,902	\$9,530,902	\$9,530,902	\$9,530,902	\$9,530,902	\$9,530,902	\$9,530,902
2010Q1	337,613,503	\$1,606,829,125	\$4.76	93.6%	-42.3%	3.1%	320,973,452	\$2.54	21,936,522	\$4.53	\$5,775,747	\$5,775,747	\$5,775,747	\$5,775,747	\$5,775,747	\$5,775,747	\$5,775,747	\$5,775,747	\$5,775,747	\$5,775,747	\$5,775,747	\$5,775,747	\$5,775,747	\$5,775,747	\$5,775,747	\$5,775,747
2010Q2	342,909,973	\$1,645,068,869	\$4.80	94.6%	-42.3%	14.7%	317,955,673	\$2.54	18,229,791	\$5.05	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010Q3	336,185,463	\$1,578,344,774	\$4.69	95.4%	-42.3%	16.1%	324,672,346	\$2.54	15,685,950	\$5.11	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010Q4	340,358,296	\$1,643,480,690	\$4.83	96.6%	-42.3%	19.3%	293,710,723	\$2.54	10,261,195	\$5.25	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2011Q1	303,971,918	\$1,526,485,048	\$5.02	96.7%	-42.3%	18.8%	309,019,490	\$2.54	10,658,827	\$5.23	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2011Q2	319,678,317	\$1,611,187,175	\$5.04	97.3%	-42.3%	28.8%	303,667,288	\$2.54	8,395,093	\$5.67	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2011Q3	312,062,380	\$1,520,652,211	\$4.87	97.1%	-42.3%	29.8%	312,736,092	\$2.54	9,251,840	\$5.71	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2011Q4	321,987,932	\$1,641,033,084	\$5.10	96.9%	-42.3%	30.3%	255,914,365	\$2.54	8,164,441	\$5.73	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2012Q1	264,078,806	\$1,359,897,049	\$5.15	96.9%	-42.3%	36.4%	275,016,957	\$2.54	8,773,871	\$6.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2012Q2	283,790,829	\$1,482,450,406	\$5.22	96.9%	-42.3%	40.0%	277,165,345	\$2.54	8,842,411	\$6.16	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.9%	-42.3%	43.6%	287,382,559	\$2.54	9,168,371	\$6.32	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.9%	-42.3%	47.2%	241,120,928	\$2.54	7,692,486	\$6.48	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-42.3%	50.8%	275,798,740	\$2.54	8,798,812	\$6.64	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-42.3%	54.5%	254,553,059	\$2.54	8,121,011	\$6.79	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-42.3%	58.1%	249,263,559	\$2.54	7,952,260	\$6.95	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-42.3%	61.7%	162,649,373	\$2.54	5,189,006	\$7.11	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-42.3%						\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total											\$15,024,172,972	\$69,496,390	\$15,093,669,362	\$15,093,669,362	\$15,093,669,362	\$15,093,669,362	\$15,093,669,362	\$15,093,669,362	\$15,093,669,362	\$15,093,669,362	\$15,093,669,362	\$15,093,669,362	\$15,093,669,362	\$15,093,669,362	\$15,093,669,362	\$15,093,669,362

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2008Q4 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2008Q4 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.



**Attachment E.2: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2009Q3**

Scenario 1.A

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges		
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges
2009Q2	370,370,888	\$1,670,966,347	\$4.51	64.6%	-40.8%	-2.0%	231,621,492	\$2.67	126,755,360	\$4.42	\$426,040,227	\$11,495,101
2009Q3	358,376,852	\$1,616,747,386	\$4.51	86.3%	-42.3%	-6.4%	309,274,622	\$2.60	49,281,863	\$4.22	\$625,692,179	\$19,867,351
2009Q4	358,556,485	\$1,659,417,762	\$4.63	88.7%	-42.3%	-1.6%	299,563,400	\$2.60	38,050,104	\$4.44	\$645,385,130	\$12,136,732
2010Q1	337,613,503	\$1,606,829,125	\$4.76	90.4%	-42.3%	2.4%	310,084,533	\$2.60	32,825,441	\$4.62	\$679,836,431	\$5,783,241
2010Q2	342,909,973	\$1,645,068,869	\$4.80	92.4%	-42.3%	-0.2%	310,572,587	\$2.60	25,612,877	\$4.50	\$649,068,080	\$4,961,458
2010Q3	336,185,463	\$1,578,344,774	\$4.69	93.6%	-42.3%	3.1%	318,585,009	\$2.60	21,773,286	\$4.65	\$708,444,753	\$3,887,784
2010Q4	340,358,296	\$1,643,480,690	\$4.83	94.6%	-42.3%	14.7%	287,488,920	\$2.60	16,482,998	\$5.18	\$694,814,971	\$0
2011Q1	303,971,918	\$1,526,485,048	\$5.02	95.4%	-42.3%	16.1%	304,945,437	\$2.60	14,732,880	\$5.24	\$742,563,804	\$0
2011Q2	319,678,317	\$1,611,787,175	\$5.04	96.6%	-42.3%	19.3%	301,528,075	\$2.60	10,534,305	\$5.38	\$683,852,289	\$0
2011Q3	312,062,380	\$1,520,652,211	\$4.87	96.7%	-42.3%	18.8%	311,252,097	\$2.60	10,735,835	\$5.36	\$775,519,347	\$0
2011Q4	321,987,932	\$1,641,033,084	\$5.10	97.3%	-42.3%	28.8%	256,974,566	\$2.60	7,104,240	\$5.81	\$653,905,854	\$0
2012Q1	264,078,806	\$1,359,897,049	\$5.15	97.1%	-42.3%	29.8%	275,636,526	\$2.60	8,154,303	\$5.86	\$721,833,563	\$0
2012Q2	283,790,829	\$1,482,450,406	\$5.22	96.9%	-42.3%	30.3%	277,165,345	\$2.60	8,842,411	\$5.88	\$727,491,581	\$0
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.9%	-42.3%	36.4%	287,382,559	\$2.60	9,168,371	\$6.15	\$817,527,826	\$0
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.9%	-42.3%	40.0%	241,120,928	\$2.60	7,692,486	\$6.32	\$706,019,198	\$0
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-42.3%	43.6%	275,798,740	\$2.60	8,798,812	\$6.48	\$865,634,331	\$0
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-42.3%	47.2%	254,553,059	\$2.60	8,121,011	\$6.64	\$808,045,030	\$0
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-42.3%	50.8%	249,263,559	\$2.60	7,952,260	\$6.81	\$818,505,262	\$0
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-42.3%	54.5%	162,649,373	\$2.60	5,189,006	\$6.97	\$551,872,621	\$0
2014Q1	167,838,379	\$1,006,690,517	\$6.00									

Total

\$13,302,052,479 \$58,131,667 \$13,360,184,146

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2009Q2 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2009Q2 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment E.3: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2010Q1**

Scenario 1.A

Quarter	Actual Nexium Purchases				Yardsticks		But-For Purchases		Overcharges		Total Overcharges
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	
2009Q4	358,556,485	\$1,659,417,762	\$4.63	64.6%	-40.8%	-2.0%	218,201,993	\$2.74	119,411,510	\$4.53	\$467,264,231
2010Q1	337,613,503	\$1,606,829,125	\$4.76	86.3%	-42.3%	-6.4%	295,778,648	\$2.67	47,131,325	\$4.33	\$650,426,284
2010Q2	342,909,973	\$1,645,068,869	\$4.80	88.7%	-42.3%	-1.6%	298,296,304	\$2.67	37,889,159	\$4.56	\$608,654,104
2010Q3	336,185,463	\$1,578,344,774	\$4.69	90.4%	-42.3%	2.4%	307,777,117	\$2.67	32,581,178	\$4.74	\$666,591,061
2010Q4	340,358,296	\$1,643,480,690	\$4.83	92.4%	-42.3%	-0.2%	280,813,286	\$2.67	23,158,632	\$4.62	\$669,167,059
2011Q1	303,971,918	\$1,526,485,048	\$5.02	93.6%	-42.3%	3.1%	299,227,963	\$2.67	20,450,354	\$4.77	\$714,041,603
2011Q2	319,678,317	\$1,611,187,175	\$5.04	94.6%	-42.3%	14.7%	295,140,673	\$2.67	16,921,707	\$5.31	\$649,521,827
2011Q3	312,062,380	\$1,520,652,211	\$4.87	95.4%	-42.3%	16.1%	307,148,610	\$2.67	14,839,322	\$5.37	\$744,643,565
2011Q4	321,987,932	\$1,641,033,084	\$5.10	96.6%	-42.3%	19.3%	255,164,285	\$2.67	8,914,521	\$5.52	\$0
2012Q1	264,078,806	\$1,359,897,049	\$5.15	96.7%	-42.3%	18.8%	274,328,575	\$2.67	9,462,254	\$5.50	\$0
2012Q2	283,790,829	\$1,482,450,406	\$5.22	97.3%	-42.3%	28.8%	278,313,585	\$2.67	7,694,172	\$5.96	\$699,963,525
2012Q3	286,007,757	\$1,495,738,212	\$5.23	97.1%	-42.3%	29.8%	288,029,984	\$2.67	8,520,946	\$6.01	\$711,792,700
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.9%	-42.3%	30.3%	241,120,928	\$2.67	7,692,486	\$6.03	\$800,003,559
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-42.3%	36.4%	275,798,740	\$2.67	8,798,812	\$6.31	\$689,807,159
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-42.3%	40.0%	254,553,059	\$2.67	8,121,011	\$6.48	\$847,090,690
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-42.3%	43.6%	249,263,559	\$2.67	7,952,260	\$6.65	\$790,929,867
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-42.3%	47.2%	162,649,373	\$2.67	5,189,006	\$6.81	\$801,745,744
2014Q1	167,838,379	\$1,006,690,517	\$6.00								\$540,936,705

Total

\$11,612,996,338 \$71,726,418 \$11,684,722,757

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2009Q4 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2009Q4 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10).
- 13 = Column 11 + Column 12.

If the but-for price is greater than the actual price, set to zero.

**Attachment E.4: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2010Q3**

Scenario 1.A

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2010Q2	342,909,973	\$1,645,068,869	\$4.80										
2010Q3	336,185,463	\$1,578,344,774	\$4.69	64.6%	-40.8%	-2.0%	217,279,041	\$2.84	118,906,423	\$4.70	\$402,768,697	\$0	\$402,768,697
2010Q4	340,358,296	\$1,643,480,690	\$4.83	86.3%	-42.3%	-6.4%	293,577,687	\$2.77	46,780,609	\$4.49	\$604,393,916	\$15,725,221	\$620,119,137
2011Q1	303,971,918	\$1,526,485,048	\$5.02	88.7%	-42.3%	-1.6%	269,713,327	\$2.77	34,258,591	\$4.72	\$607,350,423	\$10,281,792	\$617,632,215
2011Q2	319,678,317	\$1,611,187,175	\$5.04	90.4%	-42.3%	2.4%	289,076,753	\$2.77	30,601,564	\$4.91	\$656,223,619	\$3,859,237	\$660,082,856
2011Q3	312,062,380	\$1,520,652,211	\$4.87	92.4%	-42.3%	-0.2%	288,287,363	\$2.77	23,775,018	\$4.79	\$606,254,381	\$2,059,955	\$608,314,337
2011Q4	321,987,932	\$1,641,033,084	\$5.10	93.6%	-42.3%	3.1%	301,389,828	\$2.77	20,598,104	\$4.94	\$701,215,885	\$3,128,786	\$704,344,671
2012Q1	264,078,806	\$1,359,897,049	\$5.15	94.6%	-42.3%	14.7%	249,759,027	\$2.77	14,319,779	\$5.50	\$594,333,729	\$0	\$594,333,729
2012Q2	283,790,829	\$1,482,450,406	\$5.22	95.4%	-42.3%	16.1%	270,711,880	\$2.77	13,078,949	\$5.57	\$664,268,427	\$0	\$664,268,427
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.6%	-42.3%	19.3%	276,352,979	\$2.77	9,654,778	\$5.73	\$679,759,978	\$0	\$679,759,978
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.7%	-42.3%	18.8%	286,663,224	\$2.77	9,887,706	\$5.70	\$768,180,939	\$0	\$768,180,939
2013Q1	248,813,414	\$1,376,691,190	\$5.53	97.3%	-42.3%	28.8%	242,119,843	\$2.77	6,693,571	\$6.18	\$668,993,356	\$0	\$668,993,356
2013Q2	284,597,553	\$1,634,614,615	\$5.74	97.1%	-42.3%	29.8%	276,420,070	\$2.77	8,177,483	\$6.23	\$821,974,054	\$0	\$821,974,054
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-42.3%	30.3%	254,553,059	\$2.77	8,121,011	\$6.25	\$766,042,765	\$0	\$766,042,765
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-42.3%	36.4%	249,263,559	\$2.77	7,952,260	\$6.54	\$777,375,785	\$0	\$777,375,785
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-42.3%	40.0%	162,649,373	\$2.77	5,189,006	\$6.72	\$525,034,828	\$0	\$525,034,828
Total											\$9,844,170,781	\$35,054,992	\$9,879,225,773

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2010Q2 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2010Q2 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment E.5: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2011Q1**

Scenario 1.A

Quarter	1	2	3	4	5	6	7	8	9	10	11	12	13
	Actual Nexium Purchases			Yardsticks		But-For Purchases		But-For Purchases		Overcharges		Overcharges	
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2010Q4	340,358,296	\$1,643,480,690	\$4.83	64.6%	-40.8%	-2.0%	196,459,199	\$2.86	107,512,719	\$4.73	\$424,762,361	\$31,232,157	\$455,994,518
2011Q1	303,971,918	\$1,526,485,048	\$5.02	86.3%	-42.3%	-6.4%	275,740,071	\$2.79	43,938,246	\$4.52	\$620,965,211	\$22,768,164	\$643,733,375
2011Q2	319,678,317	\$1,611,187,175	\$5.04	88.7%	-42.3%	-1.6%	276,891,969	\$2.79	35,170,412	\$4.75	\$577,286,354	\$4,235,636	\$581,521,990
2011Q3	312,062,380	\$1,520,652,211	\$4.87	90.4%	-42.3%	2.4%	291,165,277	\$2.79	30,822,655	\$4.95	\$672,165,351	\$4,641,669	\$676,807,020
2011Q4	321,987,932	\$1,641,033,084	\$5.10	92.4%	-42.3%	-0.2%	243,959,501	\$2.79	20,119,305	\$4.82	\$576,124,110	\$6,681,486	\$582,805,595
2012Q1	264,078,806	\$1,359,897,049	\$5.15	93.6%	-42.3%	3.1%	265,636,257	\$2.79	18,154,572	\$4.98	\$647,013,297	\$4,480,767	\$651,494,064
2012Q2	283,790,829	\$1,482,450,406	\$5.22	94.6%	-42.3%	14.7%	270,498,872	\$2.79	15,508,885	\$5.54	\$660,471,796	\$0	\$660,471,796
2012Q3	286,007,757	\$1,495,738,212	\$5.23	95.4%	-42.3%	16.1%	282,883,912	\$2.79	13,667,018	\$5.61	\$752,941,038	\$0	\$752,941,038
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.6%	-42.3%	19.3%	240,414,207	\$2.79	8,399,207	\$5.76	\$659,935,741	\$0	\$659,935,741
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.7%	-42.3%	18.8%	275,108,401	\$2.79	9,489,152	\$5.74	\$813,101,792	\$53,733	\$813,155,525
2013Q2	284,597,553	\$1,634,614,615	\$5.74	97.3%	-42.3%	28.8%	255,607,621	\$2.79	7,066,450	\$6.22	\$764,596,915	\$0	\$764,596,915
2013Q3	262,674,071	\$1,518,078,347	\$5.78	97.1%	-42.3%	29.8%	249,825,109	\$2.79	7,390,710	\$6.27	\$774,612,180	\$0	\$774,612,180
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-42.3%	30.3%	162,649,373	\$2.79	5,189,006	\$6.29	\$522,095,386	\$0	\$522,095,386
2014Q1	167,838,379	\$1,006,690,517	\$6.00										

Total

\$8,466,071,533    \$74,093,611    \$8,540,165,144

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2010Q4 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2010Q4 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment E.6: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2011Q3**

Scenario 1.A

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges		
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Brand Overcharges	Total Overcharges
2011Q2	319,678,317	\$1,611,187,175	\$5.04	64.6%	-40.8%	-2.0%	201,688,122	\$2.98	110,374,259	\$4.94	\$0	\$380,794,556
2011Q3	312,062,380	\$1,520,652,211	\$4.87	86.3%	-42.3%	-6.4%	277,732,241	\$2.91	44,255,691	\$4.72	\$16,675,898	\$623,938,831
2011Q4	321,987,932	\$1,641,033,084	\$5.10	88.7%	-42.3%	-1.6%	234,316,294	\$2.91	29,762,512	\$4.96	\$5,627,964	\$530,385,385
2012Q1	264,078,806	\$1,359,897,049	\$5.15	90.4%	-42.3%	2.4%	256,624,634	\$2.91	27,166,194	\$5.16	\$1,664,926	\$595,412,501
2012Q2	283,790,829	\$1,482,450,406	\$5.22	92.4%	-42.3%	-0.2%	264,217,756	\$2.91	21,790,001	\$5.03	\$4,387,604	\$617,280,322
2012Q3	286,007,757	\$1,495,738,212	\$5.23	93.6%	-42.3%	3.1%	277,580,074	\$2.91	18,970,856	\$5.19	\$4,836,130	\$709,786,940
2012Q4	296,550,930	\$1,616,111,381	\$5.45	94.6%	-42.3%	14.7%	235,321,407	\$2.91	13,492,007	\$5.78	\$0	\$617,239,666
2013Q1	248,813,414	\$1,376,691,190	\$5.53	95.4%	-42.3%	16.1%	271,481,425	\$2.91	13,116,128	\$5.85	\$0	\$769,253,027
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.6%	-42.3%	19.3%	253,806,969	\$2.91	8,867,102	\$6.02	\$0	\$728,238,474
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.7%	-42.3%	18.8%	248,639,639	\$2.91	8,576,180	\$5.99	\$0	\$740,594,894
2013Q4	257,215,820	\$1,514,653,791	\$5.89	97.3%	-42.3%	28.8%	163,323,196	\$2.91	4,515,183	\$6.49	\$0	\$504,327,924
2014Q1	167,838,379	\$1,006,690,517	\$6.00									
Total											\$33,192,521	\$6,817,252,521

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2011Q2 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2011Q2 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment E.7: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2012Q1**

## Scenario 1.A

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
	Quantity (Pills)	Net Sales	Average	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generics Overcharges	Brand-Brand Overcharges	Total Overcharges
			Sales Price (\$/Pill)										
2011Q4	321,987,932	\$1,641,033,084	\$5.10										
2012Q1	264,078,806	\$1,359,897,049	\$5.15	64.6%	-40.8%	-2.0%	170,675,998	\$3.02	93,402,807	\$4.99	\$363,749,523	\$14,552,409	\$378,301,932
2012Q2	283,790,829	\$1,482,450,406	\$5.22	86.3%	-42.3%	-6.4%	244,785,146	\$2.94	39,005,683	\$4.77	\$558,363,521	\$17,592,982	\$575,956,504
2012Q3	286,007,757	\$1,495,738,212	\$5.23	88.7%	-42.3%	-1.6%	253,773,783	\$2.94	32,233,974	\$5.02	\$580,381,662	\$6,884,256	\$587,265,917
2012Q4	296,550,930	\$1,616,111,381	\$5.45	90.4%	-42.3%	2.4%	268,163,261	\$2.94	28,387,669	\$5.22	\$672,281,132	\$6,509,916	\$678,791,048
2013Q1	248,813,414	\$1,376,691,190	\$5.53	92.4%	-42.3%	-0.2%	229,857,129	\$2.94	18,956,285	\$5.08	\$595,403,147	\$8,497,407	\$603,900,554
2013Q2	284,597,553	\$1,634,614,615	\$5.74	93.6%	-42.3%	3.1%	266,391,374	\$2.94	18,206,179	\$5.25	\$746,133,563	\$8,931,142	\$755,064,704
2013Q3	262,674,071	\$1,518,078,347	\$5.78	94.6%	-42.3%	14.7%	248,430,464	\$2.94	14,243,606	\$5.85	\$704,701,621	\$0	\$704,701,621
2013Q4	257,215,820	\$1,514,653,791	\$5.89	95.4%	-42.3%	16.1%	245,361,622	\$2.94	11,854,197	\$5.92	\$722,820,963	\$0	\$722,820,963
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.6%	-42.3%	19.3%	162,172,651	\$2.94	5,665,728	\$6.08	\$495,480,854	\$0	\$495,480,854

Total

\$5,439,315,986	\$62,968,111	\$5,502,284,097
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Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2011Q4 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2011Q4 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10).
- 13 = Column 11 + Column 12.

Privileged and Confidential: Subject to Court Order

**Attachment F**





**Attachment F.2: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2009Q1**

Scenario 1.B

Quarter	1		2		3		4		5		6		7		8		9		10		11		12		13	
	Actual Nexium Purchases		Yardsticks		But-For Purchases		Generic		Brand		Generic		Brand		Generic		Brand		Brand		Brand-Brand		Overcharges		Overcharges	
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Brand Overcharges	Brand-Brand Overcharges	Overcharges	Overcharges	Overcharges	Overcharges
2008Q4	393,177,650	\$1,729,597,621	\$4.40	64.6%	-40.8%	-2.0%	222,711,392	\$2.61	121,879,289	\$4.31											\$22,696,713	\$22,696,713	\$443,906,551	\$443,906,551		
2009Q1	344,590,681	\$1,549,462,904	\$4.50	86.3%	-42.3%	-6.4%	319,465,192	\$2.54	50,905,695	\$4.12											\$19,960,865	\$19,960,865	\$649,834,342	\$649,834,342		
2009Q2	370,370,888	\$1,670,966,347	\$4.51	88.7%	-63.4%	-1.6%	317,986,654	\$1.61	40,390,198	\$4.33											\$7,338,934	\$7,338,934	\$929,349,064	\$929,349,064		
2009Q3	358,376,852	\$1,616,747,386	\$4.51	90.4%	-64.0%	2.4%	324,233,265	\$1.58	34,323,220	\$4.51											\$4,193,229	\$4,193,229	\$991,690,151	\$991,690,151		
2009Q4	358,556,485	\$1,659,417,762	\$4.63	92.4%	-64.0%	-0.2%	311,891,829	\$1.58	25,721,675	\$4.39											\$9,530,902	\$9,530,902	\$1,000,398,982	\$1,000,398,982		
2010Q1	337,613,503	\$1,606,829,125	\$4.76	93.6%	-64.0%	3.1%	320,973,452	\$1.58	21,936,522	\$4.53											\$5,775,747	\$5,775,747	\$1,037,693,977	\$1,037,693,977		
2010Q2	342,909,973	\$1,645,068,869	\$4.80	94.6%	-64.0%	14.7%	317,955,673	\$1.58	18,229,791	\$5.05											\$0	\$0	\$989,620,928	\$989,620,928		
2010Q3	336,185,463	\$1,578,344,774	\$4.69	95.4%	-64.0%	16.1%	324,672,346	\$1.58	15,685,950	\$5.11											\$0	\$0	\$1,053,972,259	\$1,053,972,259		
2010Q4	340,358,296	\$1,643,480,690	\$4.83	96.6%	-64.0%	19.3%	293,710,723	\$1.58	10,261,195	\$5.25											\$0	\$0	\$1,010,183,491	\$1,010,183,491		
2011Q1	303,971,918	\$1,526,485,048	\$5.02	96.6%	-64.0%	18.8%	309,019,490	\$1.58	10,658,827	\$5.23											\$0	\$0	\$1,068,469,674	\$1,068,469,674		
2011Q2	319,678,317	\$1,611,187,175	\$5.04	96.7%	-64.0%	28.8%	303,667,288	\$1.58	8,395,093	\$5.67											\$0	\$0	\$999,216,339	\$999,216,339		
2011Q3	312,062,380	\$1,520,652,211	\$4.87	97.3%	-64.0%	29.8%	312,736,092	\$1.58	9,251,840	\$5.71											\$0	\$0	\$1,099,002,528	\$1,099,002,528		
2011Q4	321,987,932	\$1,641,033,084	\$5.10	96.9%	-64.0%	30.3%	255,914,365	\$1.58	8,164,441	\$5.73											\$0	\$0	\$912,891,098	\$912,891,098		
2012Q1	264,078,806	\$1,359,897,049	\$5.15	96.9%	-64.0%	36.4%	275,016,957	\$1.58	8,773,871	\$6.00											\$0	\$0	\$1,001,427,304	\$1,001,427,304		
2012Q2	283,790,829	\$1,482,450,406	\$5.22	96.9%	-64.0%	40.0%	277,165,345	\$1.58	8,842,411	\$6.16											\$0	\$0	\$1,010,904,656	\$1,010,904,656		
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.9%	-64.0%	43.6%	287,382,559	\$1.58	9,168,371	\$6.32											\$0	\$0	\$1,111,388,426	\$1,111,388,426		
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.9%	-64.0%	47.2%	241,120,928	\$1.58	7,692,486	\$6.48											\$0	\$0	\$952,575,360	\$952,575,360		
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-64.0%	50.8%	275,798,740	\$1.58	8,798,812	\$6.64											\$0	\$0	\$1,147,649,996	\$1,147,649,996		
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-64.0%	54.5%	254,553,059	\$1.58	8,121,011	\$6.79											\$0	\$0	\$1,068,336,104	\$1,068,336,104		
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-64.0%	58.1%	249,263,559	\$1.58	7,952,260	\$6.95											\$0	\$0	\$1,073,387,602	\$1,073,387,602		
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-64.0%	61.7%	162,649,373	\$1.58	5,189,006	\$7.11											\$0	\$0	\$718,188,358	\$718,188,358		
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-64.0%																\$0	\$0	\$20,200,590,799	\$20,200,590,799		
Total																					\$69,496,390	\$69,496,390	\$20,270,087,189	\$20,270,087,189		

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = F.1 Column 11.
- 5 = F.1 Column 12.
- 6 = F.1 Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2008Q4 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2008Q4 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10).
- 13 = Column 11 + Column 12.

If the but-for price is greater than the actual price, set to zero.

**Attachment F.3: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2009Q3**

Scenario 1.B

	1	2	3	4	5	6	7	8	9	10	11	12	13
	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
Quarter													
2009Q2	370,370,888	\$1,670,966,347	\$4.51	64.6%	-40.8%	-2.0%	231,621,492	\$2.67	126,755,360	\$4.42	\$426,040,227	\$11,495,101	\$437,535,328
2009Q3	358,376,852	\$1,616,747,386	\$4.51	86.3%	-42.3%	-6.4%	309,274,622	\$2.60	49,281,863	\$4.22	\$625,692,179	\$19,867,351	\$645,559,530
2009Q4	358,556,485	\$1,659,417,762	\$4.63	88.7%	-63.4%	-1.6%	299,563,400	\$1.65	38,050,104	\$4.44	\$930,547,358	\$12,136,732	\$942,684,090
2010Q1	337,613,503	\$1,606,829,125	\$4.76	90.4%	-64.0%	2.4%	310,084,533	\$1.62	32,825,441	\$4.62	\$984,353,230	\$5,783,241	\$990,136,471
2010Q2	342,909,973	\$1,645,068,869	\$4.80	92.4%	-64.0%	-0.2%	310,572,587	\$1.62	25,612,877	\$4.50	\$954,064,170	\$4,961,458	\$959,025,628
2010Q3	336,185,463	\$1,578,344,774	\$4.69	93.6%	-64.0%	3.1%	318,585,009	\$1.62	21,773,286	\$4.65	\$1,021,309,398	\$3,887,784	\$1,025,197,181
2010Q4	340,358,296	\$1,643,480,690	\$4.83	94.6%	-64.0%	14.7%	287,488,920	\$1.62	16,482,998	\$5.18	\$977,141,873	\$0	\$977,141,873
2011Q1	303,971,918	\$1,526,485,048	\$5.02	94.6%	-64.0%	14.7%	287,488,920	\$1.62	16,482,998	\$5.18	\$977,141,873	\$0	\$977,141,873
2011Q2	319,678,317	\$1,611,187,175	\$5.04	95.4%	-64.0%	16.1%	304,945,437	\$1.62	14,732,880	\$5.24	\$1,042,033,782	\$0	\$1,042,033,782
2011Q3	312,062,380	\$1,520,652,211	\$4.87	96.6%	-64.0%	19.3%	301,528,075	\$1.62	10,534,305	\$5.38	\$979,966,266	\$0	\$979,966,266
2011Q4	321,987,932	\$1,641,033,084	\$5.10	96.7%	-64.0%	18.8%	311,252,097	\$1.62	10,735,835	\$5.36	\$1,081,182,746	\$0	\$1,081,182,746
2012Q1	264,078,806	\$1,359,897,049	\$5.15	97.3%	-64.0%	28.8%	256,974,566	\$1.62	7,104,240	\$5.81	\$906,266,304	\$0	\$906,266,304
2012Q2	283,790,829	\$1,482,450,406	\$5.22	97.1%	-64.0%	29.8%	275,636,526	\$1.62	8,154,303	\$5.86	\$992,520,887	\$0	\$992,520,887
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.9%	-64.0%	30.3%	277,165,345	\$1.62	8,842,411	\$5.88	\$999,680,274	\$0	\$999,680,274
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.9%	-64.0%	36.4%	287,382,559	\$1.62	9,168,371	\$6.15	\$1,099,750,277	\$0	\$1,099,750,277
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-64.0%	40.0%	241,120,928	\$1.62	7,692,486	\$6.32	\$942,810,671	\$0	\$942,810,671
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-64.0%	43.6%	275,798,740	\$1.62	8,798,812	\$6.48	\$1,136,480,958	\$0	\$1,136,480,958
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-64.0%	47.2%	254,553,059	\$1.62	8,121,011	\$6.64	\$1,058,027,453	\$0	\$1,058,027,453
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-64.0%	50.8%	249,263,559	\$1.62	7,952,260	\$6.81	\$1,063,293,161	\$0	\$1,063,293,161
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-64.0%	54.5%	162,649,373	\$1.62	5,189,006	\$6.97	\$711,601,537	\$0	\$711,601,537
Total											\$17,932,762,751	\$58,131,667	\$17,990,894,417

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = F.1 Column 11.
- 5 = F.1 Column 12.
- 6 = F.1 Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2009Q2 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2009Q2 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment F.4: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2010Q1**

Scenario 1.B

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2009Q4	358,556,485	\$1,659,417,762	\$4.63										
2010Q1	337,613,503	\$1,606,829,125	\$4.76	64.6%	-40.8%	-2.0%	218,201,993	\$2.74	119,411,510	\$4.53	\$440,437,642	\$26,826,589	\$467,264,231
2010Q2	342,909,973	\$1,645,068,869	\$4.80	86.3%	-42.3%	-6.4%	295,778,648	\$2.67	47,131,325	\$4.33	\$628,584,870	\$21,841,394	\$650,426,264
2010Q3	336,185,463	\$1,578,344,774	\$4.69	88.7%	-63.4%	-1.6%	298,296,304	\$1.70	37,889,159	\$4.56	\$894,640,687	\$5,298,612	\$899,939,299
2010Q4	340,358,296	\$1,643,480,690	\$4.83	90.4%	-64.0%	2.4%	307,777,117	\$1.66	32,581,178	\$4.74	\$973,769,421	\$2,873,808	\$976,643,228
2011Q1	303,971,918	\$1,526,485,048	\$5.02	92.4%	-64.0%	-0.2%	280,813,286	\$1.66	23,158,632	\$4.62	\$942,689,251	\$9,366,831	\$952,056,082
2011Q2	319,678,317	\$1,611,187,175	\$5.04	93.6%	-64.0%	3.1%	299,227,963	\$1.66	20,450,354	\$4.77	\$1,009,962,237	\$5,519,185	\$1,015,481,422
2011Q3	312,062,380	\$1,520,652,211	\$4.87	94.6%	-64.0%	14.7%	295,140,673	\$1.66	16,921,707	\$5.31	\$946,844,143	\$0	\$946,844,143
2011Q4	321,987,932	\$1,641,033,084	\$5.10	95.4%	-64.0%	16.1%	307,148,610	\$1.66	14,839,322	\$5.37	\$1,054,062,578	\$0	\$1,054,062,578
2012Q1	264,078,806	\$1,359,897,049	\$5.15	96.6%	-64.0%	19.3%	255,164,285	\$1.66	8,914,521	\$5.52	\$889,193,521	\$0	\$889,193,521
2012Q2	283,790,829	\$1,482,450,406	\$5.22	96.7%	-64.0%	18.8%	274,328,575	\$1.66	9,462,254	\$5.50	\$976,319,902	\$0	\$976,319,902
2012Q3	286,007,757	\$1,495,738,212	\$5.23	97.3%	-64.0%	28.8%	278,313,585	\$1.66	7,694,172	\$5.96	\$992,163,544	\$0	\$992,163,544
2012Q4	296,550,930	\$1,616,111,381	\$5.45	97.1%	-64.0%	29.8%	288,029,984	\$1.66	8,520,946	\$6.01	\$1,090,162,625	\$0	\$1,090,162,625
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-64.0%	30.3%	241,120,928	\$1.66	7,692,486	\$6.03	\$932,710,423	\$0	\$932,710,423
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-64.0%	36.4%	275,798,740	\$1.66	8,798,812	\$6.31	\$1,124,928,100	\$0	\$1,124,928,100
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-64.0%	40.0%	254,553,059	\$1.66	8,121,011	\$6.48	\$1,047,364,551	\$0	\$1,047,364,551
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-64.0%	43.6%	249,263,559	\$1.66	7,952,260	\$6.65	\$1,052,851,828	\$0	\$1,052,851,828
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-64.0%	47.2%	162,649,373	\$1.66	5,189,006	\$6.81	\$704,788,362	\$0	\$704,788,362

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = F.1. Column 11.
- 5 = F.1 Column 12.
- 6 = F.1 Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2009Q4 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2009Q4 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment F.5: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2010Q3**

Scenario 1.B

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2010Q2	342,909,973	\$1,645,068,869	\$4.80				217,279,041	\$2.84	118,906,423	\$4.70	\$402,768,697	\$0	\$402,768,697
2010Q3	336,185,463	\$1,578,344,774	\$4.69	64.6%	-40.8%	-2.0%	293,577,687	\$2.77	46,780,609	\$4.49	\$604,393,916	\$15,725,221	\$620,119,137
2010Q4	340,358,296	\$1,643,480,690	\$4.83	86.3%	-42.3%	-6.4%	269,713,327	\$1.76	34,258,591	\$4.72	\$880,360,552	\$10,281,792	\$890,642,344
2011Q1	303,971,918	\$1,526,485,048	\$5.02	88.7%	-63.4%	-1.6%	289,076,753	\$1.73	30,601,564	\$4.91	\$958,091,861	\$3,859,237	\$961,951,098
2011Q2	319,678,317	\$1,611,187,175	\$5.04	90.4%	-64.0%	2.4%	288,287,363	\$1.73	23,775,018	\$4.79	\$907,298,304	\$2,059,955	\$909,358,259
2011Q3	312,062,380	\$1,520,652,211	\$4.87	92.4%	-64.0%	-0.2%	301,389,828	\$1.73	20,598,104	\$4.94	\$1,015,942,050	\$3,128,786	\$1,019,070,836
2011Q4	321,987,932	\$1,641,033,084	\$5.10	93.6%	-64.0%	3.1%	249,759,027	\$1.73	14,319,779	\$5.50	\$855,144,458	\$0	\$855,144,458
2012Q1	264,078,806	\$1,359,897,049	\$5.15	94.6%	-64.0%	14.7%	270,711,880	\$1.73	13,078,949	\$5.57	\$946,959,161	\$0	\$946,959,161
2012Q2	283,790,829	\$1,482,450,406	\$5.22	95.4%	-64.0%	16.1%	276,352,979	\$1.73	9,654,778	\$5.73	\$968,341,426	\$0	\$968,341,426
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.6%	-64.0%	19.3%	286,663,224	\$1.73	9,887,706	\$5.70	\$1,067,528,856	\$0	\$1,067,528,856
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.7%	-64.0%	18.8%	242,119,843	\$1.73	6,693,571	\$6.18	\$921,826,870	\$0	\$921,826,870
2013Q1	248,813,414	\$1,376,691,190	\$5.53	97.3%	-64.0%	28.8%	276,420,070	\$1.73	8,177,483	\$6.23	\$1,110,625,562	\$0	\$1,110,625,562
2013Q2	284,597,553	\$1,634,614,615	\$5.74	97.1%	-64.0%	29.8%	254,553,059	\$1.73	8,121,011	\$6.25	\$1,031,859,660	\$0	\$1,031,859,660
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-64.0%	30.3%	249,263,559	\$1.73	7,952,260	\$6.54	\$1,037,669,122	\$0	\$1,037,669,122
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-64.0%	36.4%	162,649,373	\$1.73	5,189,006	\$6.72	\$694,881,348	\$0	\$694,881,348
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-64.0%	40.0%							

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = F.1 Column 11.
- 5 = F.1 Column 12.
- 6 = F.1 Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2010Q2 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2010Q2 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment F.6: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2011Q1**

Scenario 1.B

	1	2	3	4	5	6	7	8	9	10	11	12	13
	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
Quarter	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Generic Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2010Q4	340,358,296	\$1,643,480,690	\$4.83										
2011Q1	303,971,918	\$1,526,485,048	\$5.02	64.6%	-40.8%	-2.0%	196,459,199	\$2.86	107,512,719	\$4.73	\$424,762,361	\$31,232,157	\$455,994,518
2011Q2	319,678,317	\$1,611,187,175	\$5.04	86.3%	-42.3%	-6.4%	275,740,071	\$2.79	43,938,246	\$4.52	\$620,965,211	\$22,768,164	\$643,733,375
2011Q3	312,062,380	\$1,520,652,211	\$4.87	88.7%	-63.4%	-1.6%	276,891,969	\$1.77	35,170,412	\$4.75	\$859,391,503	\$4,235,636	\$863,627,138
2011Q4	321,987,932	\$1,641,033,084	\$5.10	90.4%	-64.0%	2.4%	291,165,277	\$1.74	30,822,655	\$4.95	\$978,198,266	\$4,641,669	\$982,839,935
2012Q1	264,078,806	\$1,359,897,049	\$5.15	92.4%	-64.0%	-0.2%	243,959,501	\$1.74	20,119,305	\$4.82	\$832,540,801	\$6,681,486	\$839,222,287
2012Q2	283,790,829	\$1,482,450,406	\$5.22	93.6%	-64.0%	-64.0%	265,636,257	\$1.74	18,154,572	\$4.98	\$926,213,615	\$4,480,767	\$930,694,382
2012Q3	286,007,757	\$1,495,738,212	\$5.23	94.6%	-64.0%	14.7%	270,498,872	\$1.74	15,508,885	\$5.54	\$944,783,027	\$0	\$944,783,027
2012Q4	296,550,930	\$1,616,111,381	\$5.45	95.4%	-64.0%	16.1%	282,883,912	\$1.74	13,667,018	\$5.61	\$1,050,269,720	\$0	\$1,050,269,720
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.6%	-64.0%	19.3%	240,414,207	\$1.74	8,399,207	\$5.76	\$912,626,108	\$0	\$912,626,108
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.7%	-64.0%	18.8%	275,108,401	\$1.74	9,489,152	\$5.74	\$1,102,257,925	\$53,733	\$1,102,311,659
2013Q3	262,674,071	\$1,518,078,347	\$5.78	97.3%	-64.0%	-64.0%	255,607,621	\$1.74	7,066,450	\$6.22	\$1,033,256,509	\$0	\$1,033,256,509
2013Q4	257,215,820	\$1,514,653,791	\$5.89	97.1%	-64.0%	28.8%	249,825,109	\$1.74	7,390,710	\$6.27	\$1,037,193,993	\$0	\$1,037,193,993
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-64.0%	30.3%	162,649,373	\$1.74	5,189,006	\$6.29	\$693,050,049	\$0	\$693,050,049

Total

\$11,415,509,089 \$74,093,611 \$11,489,602,699

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = F.1 Column 11.
- 5 = F.1 Column 12.
- 6 = F.1 Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2010Q4 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2010Q4 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment F.7: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2011Q3**

Scenario 1.B

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges		
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Brand Overcharges	Total Overcharges
2011Q2	319,678,317	\$1,611,187,175	\$5.04	64.6%	-40.8%	-2.0%	201,688,122	\$2.98	110,374,259	\$4.94	\$0	\$380,794,556
2011Q3	312,062,380	\$1,520,652,211	\$4.87	86.3%	-42.3%	-6.4%	277,732,241	\$2.91	44,255,691	\$4.72	\$16,675,898	\$623,938,831
2011Q4	321,987,932	\$1,641,033,084	\$5.10	88.7%	-63.4%	-1.6%	234,316,294	\$1.85	29,762,512	\$4.96	\$5,627,964	\$773,934,272
2012Q1	264,078,806	\$1,359,897,049	\$5.15	90.4%	-64.0%	2.4%	256,624,634	\$1.81	27,166,194	\$5.16	\$1,664,926	\$875,281,964
2012Q2	283,790,829	\$1,482,450,406	\$5.22	92.4%	-64.0%	-0.2%	264,217,756	\$1.81	21,790,001	\$5.03	\$4,387,604	\$902,757,270
2012Q3	286,007,757	\$1,495,738,212	\$5.23	93.6%	-64.0%	3.1%	277,580,074	\$1.81	18,970,856	\$5.19	\$4,836,130	\$1,009,474,718
2012Q4	296,550,930	\$1,616,111,381	\$5.45	94.6%	-64.0%	14.7%	235,321,407	\$1.81	13,492,007	\$5.78	\$0	\$875,402,989
2013Q1	248,813,414	\$1,376,691,190	\$5.53	95.4%	-64.0%	16.1%	271,481,425	\$1.81	13,116,128	\$5.85	\$0	\$1,067,086,309
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.6%	-64.0%	19.3%	253,806,969	\$1.81	8,867,102	\$6.02	\$0	\$1,006,681,696
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.7%	-64.0%	18.8%	248,639,639	\$1.81	8,576,180	\$5.99	\$0	\$1,013,369,209
2013Q4	257,215,820	\$1,514,653,791	\$5.89	97.3%	-64.0%	28.8%	163,323,196	\$1.81	4,515,183	\$6.49	\$0	\$683,504,395
2014Q1	167,838,379	\$1,006,690,517	\$6.00									
Total											\$33,192,521	\$9,228,742,833

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = F.1 Column 11.
- 5 = F.1 Column 12.
- 6 = F.1 Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2011Q2 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2011Q2 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.



**Attachment F.8: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2012Q1**

Scenario 1.B

Quarter	1		2		3		4		5		6		7		8		9		10		11		12		13	
	Actual Nexium Purchases		Yardsticks		But-For Purchases		But-For Purchases		But-For Purchases		But-For Purchases		But-For Purchases		But-For Purchases		But-For Purchases		But-For Purchases		But-For Purchases		But-For Purchases		But-For Purchases	
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)
2011Q4	321,987,932	\$1,641,033,084	\$5.10	64.6%	-40.8%	-2.0%	170,675,998	\$3.02	93,402,807	\$4.99	170,675,998	\$3.02	93,402,807	\$4.99	170,675,998	\$3.02	93,402,807	\$4.99	170,675,998	\$3.02	93,402,807	\$4.99	170,675,998	\$3.02	93,402,807	\$4.99
2012Q1	264,078,806	\$1,359,897,049	\$5.15	86.3%	-42.3%	-6.4%	244,785,146	\$2.94	39,005,683	\$4.77	244,785,146	\$2.94	39,005,683	\$4.77	244,785,146	\$2.94	39,005,683	\$4.77	244,785,146	\$2.94	39,005,683	\$4.77	244,785,146	\$2.94	39,005,683	\$4.77
2012Q2	283,790,829	\$1,482,450,406	\$5.22	88.7%	-63.4%	-1.6%	253,773,783	\$1.87	32,233,974	\$5.02	253,773,783	\$1.87	32,233,974	\$5.02	253,773,783	\$1.87	32,233,974	\$5.02	253,773,783	\$1.87	32,233,974	\$5.02	253,773,783	\$1.87	32,233,974	\$5.02
2012Q3	286,007,757	\$1,495,738,212	\$5.23	90.4%	-64.0%	2.4%	268,163,261	\$1.83	28,387,669	\$5.22	268,163,261	\$1.83	28,387,669	\$5.22	268,163,261	\$1.83	28,387,669	\$5.22	268,163,261	\$1.83	28,387,669	\$5.22	268,163,261	\$1.83	28,387,669	\$5.22
2012Q4	296,550,930	\$1,616,111,381	\$5.45	92.4%	-64.0%	-0.2%	229,857,129	\$1.83	18,956,285	\$5.08	229,857,129	\$1.83	18,956,285	\$5.08	229,857,129	\$1.83	18,956,285	\$5.08	229,857,129	\$1.83	18,956,285	\$5.08	229,857,129	\$1.83	18,956,285	\$5.08
2013Q1	248,813,414	\$1,376,691,190	\$5.53	93.6%	-64.0%	3.1%	266,391,374	\$1.83	14,243,606	\$5.25	266,391,374	\$1.83	14,243,606	\$5.25	266,391,374	\$1.83	14,243,606	\$5.25	266,391,374	\$1.83	14,243,606	\$5.25	266,391,374	\$1.83	14,243,606	\$5.25
2013Q2	284,597,553	\$1,634,614,615	\$5.74	94.6%	-64.0%	14.7%	248,430,464	\$1.83	11,854,197	\$5.85	248,430,464	\$1.83	11,854,197	\$5.85	248,430,464	\$1.83	11,854,197	\$5.85	248,430,464	\$1.83	11,854,197	\$5.85	248,430,464	\$1.83	11,854,197	\$5.85
2013Q3	262,674,071	\$1,518,078,347	\$5.78	95.4%	-64.0%	16.1%	245,361,622	\$1.83	5,665,728	\$6.08	245,361,622	\$1.83	5,665,728	\$6.08	245,361,622	\$1.83	5,665,728	\$6.08	245,361,622	\$1.83	5,665,728	\$6.08	245,361,622	\$1.83	5,665,728	\$6.08
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.6%	-64.0%	19.3%	162,172,651	\$1.83			162,172,651	\$1.83			162,172,651	\$1.83			162,172,651	\$1.83			162,172,651	\$1.83		
2014Q1	167,838,379	\$1,006,690,517	\$6.00																							
Total																										

Total

\$7,287,940,745 \$62,968,111 \$7,350,908,857

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = F.1 Column 11.
- 5 = F.1 Column 12.
- 6 = F.1 Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2011Q4 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2011Q4 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10).
- 13 = Column 11 + Column 12.

If the but-for price is greater than the actual price, set to zero.

**Attachment G**



## Attachment G.1.a: Yardstick Calculations for Scenario 1.C Starting in 2009Q1

Quarter	Prevacid			Lansoprazole			Yardsticks Inputs			Final Yardsticks		
	Extended Units	Dollars	Price (\$/EU)	Extended Units	Dollars	Price (\$/EU)	Generic Market Share	Generic Price Change	Brand Price Change	Number of Generics	Generic Price Change	Brand Price Change
0	136,872,443	\$636,409,983	\$4.65									
1	42,894,565	\$195,422,857	\$4.56	78,381,720	\$141,533,738	\$1.81	64.6%	-61.2%	-2.0%	3	-40.8%	-2.0%
2	14,706,983	\$64,037,087	\$4.35	92,295,550	\$157,102,854	\$1.70	86.3%	-63.4%	-6.4%	3	-42.3%	-6.4%
3	10,898,260	\$49,873,528	\$4.58	85,800,550	\$146,170,833	\$1.70	88.7%	-63.4%	-1.6%	3	-63.4%	-1.6%
4	9,121,110	\$43,440,243	\$4.76	86,162,290	\$144,112,624	\$1.67	90.4%	-64.0%	2.4%	3	-64.0%	2.4%
5	7,339,160	\$34,045,546	\$4.64	88,992,030	\$146,280,892	\$1.64	92.4%	-64.6%	-0.2%	4	-64.0%	-0.2%
6	6,046,040	\$28,975,127	\$4.79	88,465,180	\$139,015,772	\$1.57	93.6%	-66.2%	3.1%	4	-64.0%	3.1%
7	5,067,620	\$27,035,196	\$5.33	88,387,110	\$129,412,967	\$1.46	94.6%	-68.5%	14.7%	4	-64.6%	14.7%
8	4,355,650	\$23,515,693	\$5.40	90,154,510	\$119,409,121	\$1.32	95.4%	-71.5%	16.1%	4	-66.2%	16.1%
9	3,160,790	\$17,540,254	\$5.55	90,472,690	\$118,296,822	\$1.31	96.6%	-71.9%	19.3%	4	-68.5%	19.3%
10	3,008,120	\$16,620,485	\$5.53	87,211,070	\$115,779,417	\$1.33	96.7%	-71.4%	18.8%	4	-71.5%	18.8%
11	2,762,430	\$16,543,298	\$5.99	99,922,614	\$111,870,973	\$1.12	97.3%	-75.9%	28.8%	4	-71.9%	28.8%
12	2,609,730	\$15,752,281	\$6.04	88,215,620	\$104,993,978	\$1.19	97.1%	-74.4%	29.8%	5	-71.4%	29.8%
13	1,982,360	\$12,010,968	\$6.06	62,137,066	\$73,753,582	\$1.19	96.9%	-74.5%	30.3%	5	-75.9%	30.3%
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## Notes:

- 1-2 Source: IMS NSP data. Excludes oral suspension and IV forms.  
 3 = Column 2 / Column 1.  
 4-5 Source: IMS NSP data. Excludes oral suspension and IV forms.  
 6 = Column 5 / Column 4.  
 7 = Column 4 / (Column 1 + Column 4).  
 8 = (Column 6 - Column 3 in Period 0) / Column 3 in Period 0.  
 9 = (Column 3 - Column 3 in Period 0) / Column 3 in Period 0.  
 10 Number of significant generic manufacturers.  
 11 Periods 1-13, = Column 7. Period 14 onward, = Column 7 in Period 13.  
 12 Periods 1 and 2, = Column 8 \* (2/3); Periods 3-4, = Column 8; Periods 5-6, = Column 8 starting in Period 5; Period 14 onward, = Column 8 in Period 11.  
 13 Period 1-13, = Column 9. Thereafter, based on the linear trend from the previous 8 quarters of available data.  
 14 Number of generics in the but-for scenario.

## Attachment G.1.b: Yardstick Calculations for Scenario 1.C Starting in 2009Q3

Quarter	Prevacid			Lansoprazole			Yardsticks Inputs			Final Yardsticks		
	Extended Units	Dollars	Price (\$/EU)	Extended Units	Dollars	Price (\$/EU)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Market Share	Generic Price Change	Brand Price Change
0	136,872,443	\$636,409,983	\$4.65									
1	42,894,565	\$195,422,857	\$4.56	78,381,720	\$141,533,738	\$1.81	64.6%	-61.2%	-2.0%	64.6%	-40.8%	-2.0%
2	14,706,983	\$64,037,087	\$4.35	92,295,550	\$157,102,854	\$1.70	86.3%	-63.4%	-6.4%	86.3%	-42.3%	-6.4%
3	10,898,260	\$49,873,528	\$4.58	85,800,550	\$146,170,833	\$1.70	88.7%	-63.4%	-1.6%	88.7%	-63.4%	-1.6%
4	9,121,110	\$43,440,243	\$4.76	86,162,290	\$144,112,624	\$1.67	90.4%	-64.0%	2.4%	90.4%	-64.0%	2.4%
5	7,339,160	\$34,045,546	\$4.64	88,992,030	\$146,280,892	\$1.64	92.4%	-64.6%	-0.2%	92.4%	-64.6%	-0.2%
6	6,046,040	\$28,975,127	\$4.79	88,465,180	\$139,015,772	\$1.57	93.6%	-66.2%	3.1%	93.6%	-66.2%	3.1%
7	5,067,620	\$27,035,196	\$5.33	88,387,110	\$129,412,967	\$1.46	94.6%	-68.5%	14.7%	94.6%	-68.5%	14.7%
8	4,355,650	\$23,515,693	\$5.40	90,154,510	\$119,409,121	\$1.32	95.4%	-71.5%	16.1%	95.4%	-71.5%	16.1%
9	3,160,790	\$17,540,254	\$5.55	90,472,690	\$118,296,822	\$1.31	96.6%	-71.9%	19.3%	96.6%	-71.9%	19.3%
10	3,008,120	\$16,620,485	\$5.53	87,211,070	\$115,779,417	\$1.33	96.7%	-71.4%	18.8%	96.7%	-71.4%	18.8%
11	2,762,430	\$16,543,298	\$5.99	99,922,614	\$111,870,973	\$1.12	97.3%	-75.9%	28.8%	97.3%	-75.9%	28.8%
12	2,609,730	\$15,752,281	\$6.04	88,215,620	\$104,993,978	\$1.19	97.1%	-74.4%	29.8%	97.1%	-75.9%	29.8%
13	1,982,360	\$12,010,968	\$6.06	62,137,066	\$73,753,582	\$1.19	96.9%	-74.5%	30.3%	96.9%	-75.9%	30.3%
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## Notes:

1-2 Source: IMS NSP data. Excludes oral suspension and IV forms.

3 = Column 2 / Column 1.

4-5 Source: IMS NSP data. Excludes oral suspension and IV forms.

6 = Column 5 / Column 4.

7 = Column 4 / (Column 1 + Column 4).

8 = (Column 6 - Column 3 in Period 0) / Column 3 in Period 0.

9 = (Column 3 - Column 3 in Period 0) / Column 3 in Period 0.

10 Number of significant generic manufacturers.

11 Periods 1-13, = Column 7. Period 14 onward, = Column 7 in Period 13.

12 Periods 1 and 2, = Column 8 \* (2/3); Periods 3-11, = Column 8; Period 12 onward, = Column 8 in Period 11.

13 Period 1-13, = Column 9. Thereafter, based on the linear trend from the previous 8 quarters of available data.

14 Number of generics in the but-for scenario.

**Attachment G.1.c: Yardstick Calculations for Scenario 1.C Starting in 2010Q1, 2010Q3, 2011Q1, 2011Q3 and 2012Q1**

Quarter	1			2			3			4			5			6			7			8			9			10			11			12			13			14		
	Prevacid						Lansoprazole						Yardsticks Inputs						Final Yardsticks																							
	Extended Units	Dollars	Price (\$/EU)	Extended Units	Dollars	Price (\$/EU)	Generic Market Share	Generic Price Change	Brand Price Change	Price Number of Generics	Generic Market Share	Generic Price Change	Brand Price Change	Price Number of Generics	Generic Market Share	Generic Price Change	Brand Price Change	Price Number of Generics	Generic Market Share	Generic Price Change	Brand Price Change	Price Number of Generics	Generic Market Share	Generic Price Change	Brand Price Change	Price Number of Generics	Generic Market Share	Generic Price Change	Brand Price Change	Price Number of Generics												
0	136,872,443	\$636,409,983	\$4.65																																							
1	42,894,565	\$195,422,857	\$4.56	78,381,720	\$141,533,738	\$1.81	64.6%	-61.2%	-2.0%	3	64.6%	-40.8%	-2.0%	2																												
2	14,706,983	\$64,037,087	\$4.35	92,295,550	\$157,102,854	\$1.70	86.3%	-63.4%	-6.4%	3	86.3%	-42.3%	-6.4%	2																												
3	10,898,260	\$49,873,528	\$4.58	85,800,550	\$146,170,833	\$1.70	88.7%	-63.4%	-1.6%	3	88.7%	-64.6%	-1.6%	4																												
4	9,121,110	\$43,440,243	\$4.76	86,162,290	\$144,112,624	\$1.67	90.4%	-64.0%	2.4%	3	90.4%	-66.2%	2.4%	4																												
5	7,339,160	\$34,045,546	\$4.64	88,992,030	\$146,280,892	\$1.64	92.4%	-64.6%	-0.2%	4	92.4%	-68.5%	-0.2%	4																												
6	6,046,040	\$28,975,127	\$4.79	88,465,180	\$139,015,772	\$1.57	93.6%	-66.2%	3.1%	4	93.6%	-71.5%	3.1%	4																												
7	5,067,620	\$27,035,196	\$5.33	88,387,110	\$129,412,967	\$1.46	94.6%	-68.5%	14.7%	4	94.6%	-71.9%	14.7%	4																												
8	4,355,650	\$23,515,693	\$5.40	90,154,510	\$119,409,121	\$1.32	95.4%	-71.5%	16.1%	4	95.4%	-71.4%	16.1%	4																												
9	3,160,790	\$17,540,254	\$5.55	90,472,690	\$118,296,822	\$1.31	96.6%	-71.9%	19.3%	4	96.6%	-75.9%	19.3%	4																												
10	3,008,120	\$16,620,485	\$5.53	87,211,070	\$115,779,417	\$1.33	96.7%	-71.4%	18.8%	4	96.7%	-75.9%	18.8%	4																												
11	2,762,430	\$16,543,298	\$5.99	99,922,614	\$111,870,973	\$1.12	97.3%	-75.9%	28.8%	4	97.3%	-75.9%	28.8%	4																												
12	2,609,730	\$15,752,281	\$6.04	88,215,620	\$104,993,978	\$1.19	97.1%	-74.4%	29.8%	5	97.1%	-75.9%	29.8%	4																												
13	1,982,360	\$12,010,968	\$6.06	62,137,066	\$73,753,582	\$1.19	96.9%	-74.5%	30.3%	5	96.9%	-75.9%	30.3%	4																												
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**Notes:**

- 1-2 Source: IMS NSP data. Excludes oral suspension and IV forms.  
3 = Column 2 / Column 1.  
4-5 Source: IMS NSP data. Excludes oral suspension and IV forms.  
6 = Column 5 / Column 4.  
7 = Column 4 / (Column 1 + Column 4).  
8 = (Column 6 - Column 3 in Period 0) / Column 3 in Period 0.  
9 = (Column 3 - Column 3 in Period 0) / Column 3 in Period 0.  
10 Number of significant generic manufacturers.  
11 Periods 1-13, = Column 7. Period 14 onward, = Column 7 in Period 13.  
12 Periods 1 and 2, = Column 8 \* (2/3); Periods 3-9, = Column 8 starting in Period 5; Period 10 onward, = Column 8 in Period 11.  
13 Period 1-13, = Column 9. Thereafter, based on the linear trend from the previous 8 quarters of available data.  
14 Number of generics in the but-for scenario.

**Attachment G.2: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2009Q1**

Scenario 1.C

Quarter	1		2		3		4		5		6		7		8		9		10		11		12		13	
	Actual Nexium Purchases		Yardsticks		But-For Purchases		Generic		Brand		Generic		Brand		Generic		Brand		Generic		Brand		Generic		Brand	
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges	Brand-Brand Overcharges
2008Q4	393,177,650	\$1,729,597,621	\$4.40	64.6%	-40.8%	-2.0%	222,711,392	\$2.61	121,879,289	\$4.31	\$22,696,713	\$443,906,551	\$22,696,713	\$443,906,551	\$22,696,713	\$443,906,551	\$22,696,713	\$443,906,551	\$22,696,713	\$443,906,551	\$22,696,713	\$443,906,551	\$22,696,713	\$443,906,551	\$22,696,713	\$443,906,551
2009Q1	344,590,681	\$1,549,462,904	\$4.50	86.3%	-42.3%	-6.4%	319,465,192	\$2.54	50,905,695	\$4.12	\$19,960,865	\$649,834,342	\$19,960,865	\$649,834,342	\$19,960,865	\$649,834,342	\$19,960,865	\$649,834,342	\$19,960,865	\$649,834,342	\$19,960,865	\$649,834,342	\$19,960,865	\$649,834,342	\$19,960,865	\$649,834,342
2009Q2	370,370,888	\$1,670,966,347	\$4.51	88.7%	-63.4%	-1.6%	317,986,654	\$1.61	40,390,198	\$4.33	\$7,338,934	\$929,349,064	\$7,338,934	\$929,349,064	\$7,338,934	\$929,349,064	\$7,338,934	\$929,349,064	\$7,338,934	\$929,349,064	\$7,338,934	\$929,349,064	\$7,338,934	\$929,349,064	\$7,338,934	\$929,349,064
2009Q3	358,376,852	\$1,616,747,386	\$4.51	90.4%	-64.0%	2.4%	324,233,265	\$1.58	34,323,220	\$4.51	\$4,193,229	\$991,690,151	\$4,193,229	\$991,690,151	\$4,193,229	\$991,690,151	\$4,193,229	\$991,690,151	\$4,193,229	\$991,690,151	\$4,193,229	\$991,690,151	\$4,193,229	\$991,690,151	\$4,193,229	\$991,690,151
2009Q4	358,556,485	\$1,659,417,762	\$4.63	92.4%	-64.0%	-0.2%	311,891,829	\$1.58	25,721,675	\$4.39	\$9,530,902	\$1,000,398,982	\$9,530,902	\$1,000,398,982	\$9,530,902	\$1,000,398,982	\$9,530,902	\$1,000,398,982	\$9,530,902	\$1,000,398,982	\$9,530,902	\$1,000,398,982	\$9,530,902	\$1,000,398,982	\$9,530,902	\$1,000,398,982
2010Q1	337,613,503	\$1,606,829,125	\$4.76	93.6%	-64.0%	3.1%	320,973,452	\$1.58	21,936,522	\$4.53	\$5,775,747	\$1,037,693,977	\$5,775,747	\$1,037,693,977	\$5,775,747	\$1,037,693,977	\$5,775,747	\$1,037,693,977	\$5,775,747	\$1,037,693,977	\$5,775,747	\$1,037,693,977	\$5,775,747	\$1,037,693,977	\$5,775,747	\$1,037,693,977
2010Q2	342,909,973	\$1,645,068,869	\$4.80	94.6%	-64.6%	14.7%	317,955,673	\$1.56	18,229,791	\$5.05	\$0	\$998,290,211	\$0	\$998,290,211	\$0	\$998,290,211	\$0	\$998,290,211	\$0	\$998,290,211	\$0	\$998,290,211	\$0	\$998,290,211	\$0	\$998,290,211
2010Q3	336,185,463	\$1,578,344,774	\$4.69	95.4%	-66.2%	16.1%	324,672,346	\$1.49	15,685,950	\$5.11	\$0	\$1,085,043,841	\$0	\$1,085,043,841	\$0	\$1,085,043,841	\$0	\$1,085,043,841	\$0	\$1,085,043,841	\$0	\$1,085,043,841	\$0	\$1,085,043,841	\$0	\$1,085,043,841
2010Q4	340,358,296	\$1,643,480,690	\$4.83	96.6%	-68.5%	19.3%	293,710,723	\$1.39	10,261,195	\$5.25	\$0	\$1,068,096,391	\$0	\$1,068,096,391	\$0	\$1,068,096,391	\$0	\$1,068,096,391	\$0	\$1,068,096,391	\$0	\$1,068,096,391	\$0	\$1,068,096,391	\$0	\$1,068,096,391
2011Q1	303,971,918	\$1,526,485,048	\$5.02	96.7%	-71.5%	18.8%	309,019,490	\$1.25	10,658,827	\$5.23	\$0	\$1,170,234,433	\$0	\$1,170,234,433	\$0	\$1,170,234,433	\$0	\$1,170,234,433	\$0	\$1,170,234,433	\$0	\$1,170,234,433	\$0	\$1,170,234,433	\$0	\$1,170,234,433
2011Q2	319,678,317	\$1,611,187,175	\$5.04	97.3%	-71.9%	28.8%	303,667,288	\$1.24	8,395,093	\$5.67	\$0	\$1,104,088,928	\$0	\$1,104,088,928	\$0	\$1,104,088,928	\$0	\$1,104,088,928	\$0	\$1,104,088,928	\$0	\$1,104,088,928	\$0	\$1,104,088,928	\$0	\$1,104,088,928
2011Q3	312,062,380	\$1,520,652,211	\$4.87	97.1%	-71.4%	29.8%	312,736,092	\$1.26	9,251,840	\$5.71	\$0	\$1,201,079,050	\$0	\$1,201,079,050	\$0	\$1,201,079,050	\$0	\$1,201,079,050	\$0	\$1,201,079,050	\$0	\$1,201,079,050	\$0	\$1,201,079,050	\$0	\$1,201,079,050
2011Q4	321,987,932	\$1,641,033,084	\$5.10	96.9%	-75.9%	30.3%	255,914,365	\$1.06	8,773,871	\$5.73	\$0	\$1,046,782,213	\$0	\$1,046,782,213	\$0	\$1,046,782,213	\$0	\$1,046,782,213	\$0	\$1,046,782,213	\$0	\$1,046,782,213	\$0	\$1,046,782,213	\$0	\$1,046,782,213
2012Q1	264,078,806	\$1,359,897,049	\$5.15	96.9%	-75.9%	36.4%	275,016,957	\$1.06	8,842,411	\$6.00	\$0	\$1,145,312,651	\$0	\$1,145,312,651	\$0	\$1,145,312,651	\$0	\$1,145,312,651	\$0	\$1,145,312,651	\$0	\$1,145,312,651	\$0	\$1,145,312,651	\$0	\$1,145,312,651
2012Q2	283,790,829	\$1,482,450,406	\$5.22	96.9%	-75.9%	40.0%	277,165,345	\$1.06	9,168,371	\$6.32	\$0	\$1,155,914,012	\$0	\$1,155,914,012	\$0	\$1,155,914,012	\$0	\$1,155,914,012	\$0	\$1,155,914,012	\$0	\$1,155,914,012	\$0	\$1,155,914,012	\$0	\$1,155,914,012
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.9%	-75.9%	43.6%	287,382,559	\$1.06	7,692,486	\$6.48	\$0	\$1,261,743,297	\$0	\$1,261,743,297	\$0	\$1,261,743,297	\$0	\$1,261,743,297	\$0	\$1,261,743,297	\$0	\$1,261,743,297	\$0	\$1,261,743,297	\$0	\$1,261,743,297
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.9%	-75.9%	47.2%	241,120,928	\$1.06	8,798,812	\$6.64	\$0	\$1,078,726,739	\$0	\$1,078,726,739	\$0	\$1,078,726,739	\$0	\$1,078,726,739	\$0	\$1,078,726,739	\$0	\$1,078,726,739	\$0	\$1,078,726,739	\$0	\$1,078,726,739
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-75.9%	50.8%	275,798,740	\$1.06	8,121,011	\$6.79	\$0	\$1,291,944,362	\$0	\$1,291,944,362	\$0	\$1,291,944,362	\$0	\$1,291,944,362	\$0	\$1,291,944,362	\$0	\$1,291,944,362	\$0	\$1,291,944,362	\$0	\$1,291,944,362
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-75.9%	54.5%	254,553,059	\$1.06	7,952,260	\$6.95	\$0	\$1,201,515,002	\$0	\$1,201,515,002	\$0	\$1,201,515,002	\$0	\$1,201,515,002	\$0	\$1,201,515,002	\$0	\$1,201,515,002	\$0	\$1,201,515,002	\$0	\$1,201,515,002
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-75.9%	58.1%	249,263,559	\$1.06	5,189,006	\$7.11	\$0	\$803,284,426	\$0	\$803,284,426	\$0	\$803,284,426	\$0	\$803,284,426	\$0	\$803,284,426	\$0	\$803,284,426	\$0	\$803,284,426	\$0	\$803,284,426
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-75.9%	61.7%	162,649,373	\$1.06	5,189,006	\$7.11	\$0	\$803,284,426	\$0	\$803,284,426	\$0	\$803,284,426	\$0	\$803,284,426	\$0	\$803,284,426	\$0	\$803,284,426	\$0	\$803,284,426	\$0	\$803,284,426
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-75.9%						\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total											\$21,799,231,334	\$69,496,390	\$21,868,727,724													

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = G.1.a Column 11.
- 5 = G.1.a Column 12.
- 6 = G.1.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2008Q4 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2008Q4 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment G.3: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2009Q3**

Scenario 1.C

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges		
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges
2009Q2	370,370,888	\$1,670,966,347	\$4.51	64.6%	-40.8%	-2.0%	231,621,492	\$2.67	126,755,360	\$4.42	\$426,040,227	\$11,495,101
2009Q3	358,376,852	\$1,616,747,386	\$4.51	86.3%	-42.3%	-6.4%	309,274,622	\$2.60	49,281,863	\$4.22	\$625,692,179	\$19,867,351
2009Q4	358,556,485	\$1,659,417,762	\$4.63	88.7%	-63.4%	-1.6%	299,563,400	\$1.65	38,050,104	\$4.44	\$930,547,358	\$12,136,732
2010Q1	337,613,503	\$1,606,829,125	\$4.76	90.4%	-64.0%	2.4%	310,084,533	\$1.62	32,825,441	\$4.62	\$984,353,230	\$5,783,241
2010Q2	342,909,973	\$1,645,068,869	\$4.80	92.4%	-64.6%	-0.2%	310,572,587	\$1.59	25,612,877	\$4.50	\$962,748,860	\$4,961,458
2010Q3	336,185,463	\$1,578,344,774	\$4.69	93.6%	-66.2%	3.1%	318,585,009	\$1.52	21,773,286	\$4.65	\$1,052,578,687	\$3,887,784
2010Q4	340,358,296	\$1,643,480,690	\$4.83	94.6%	-68.5%	14.7%	287,488,920	\$1.42	16,482,998	\$5.18	\$1,035,278,687	\$0
2011Q1	303,971,918	\$1,526,485,048	\$5.02	95.4%	-71.5%	16.1%	304,945,437	\$1.29	14,732,880	\$5.24	\$1,145,026,919	\$0
2011Q2	319,678,317	\$1,611,187,175	\$5.04	96.6%	-71.9%	19.3%	301,528,075	\$1.27	10,534,305	\$5.38	\$1,086,765,058	\$0
2011Q3	312,062,380	\$1,520,652,211	\$4.87	96.7%	-71.4%	18.8%	311,252,097	\$1.29	10,735,835	\$5.36	\$1,185,374,836	\$0
2011Q4	321,987,932	\$1,641,033,084	\$5.10	97.3%	-75.9%	28.8%	256,974,566	\$1.09	7,104,240	\$5.81	\$1,044,152,833	\$0
2012Q1	264,078,806	\$1,359,897,049	\$5.15	97.1%	-75.9%	29.8%	275,636,526	\$1.09	8,154,303	\$5.86	\$1,140,420,986	\$0
2012Q2	283,790,829	\$1,482,450,406	\$5.22	96.9%	-75.9%	30.3%	277,165,345	\$1.09	8,842,411	\$5.88	\$1,148,400,703	\$0
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.9%	-75.9%	36.4%	287,382,559	\$1.09	9,168,371	\$6.15	\$1,253,953,023	\$0
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.9%	-75.9%	40.0%	241,120,928	\$1.09	7,692,486	\$6.32	\$1,072,190,510	\$0
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-75.9%	43.6%	275,798,740	\$1.09	8,798,812	\$6.48	\$1,284,468,098	\$0
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-75.9%	47.2%	254,553,059	\$1.09	8,121,011	\$6.64	\$1,194,614,659	\$0
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-75.9%	50.8%	249,263,559	\$1.09	7,952,260	\$6.81	\$1,197,042,145	\$0
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-75.9%	54.5%	162,649,373	\$1.09	5,189,006	\$6.97	\$798,875,379	\$0
2014Q1	167,838,379	\$1,006,690,517	\$6.00									
Total											\$19,568,524,377	\$58,131,667

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = G.1.b Column 11.
- 5 = G.1.b Column 12.
- 6 = G.1.b Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2009Q2 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2009Q2 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment G.4: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2010Q1**

Scenario 1.C

Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases			Overcharges		Total Overcharges		
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)			
2009Q4	358,556,485	\$1,659,417,762	\$4.63										
2010Q1	337,613,503	\$1,606,829,125	\$4.76	64.6%	-40.8%	-2.0%	218,201,993	\$2.74	119,411,510	\$4.53	\$440,437,642	\$26,826,589	\$467,264,231
2010Q2	342,909,973	\$1,645,068,869	\$4.80	86.3%	-42.3%	-6.4%	295,778,648	\$2.67	47,131,325	\$4.33	\$628,584,870	\$21,841,394	\$650,426,264
2010Q3	336,185,463	\$1,578,344,774	\$4.69	88.7%	-64.6%	-1.6%	298,296,304	\$1.64	37,889,159	\$4.56	\$912,413,467	\$5,298,612	\$917,712,078
2010Q4	340,358,296	\$1,643,480,690	\$4.83	90.4%	-66.2%	2.4%	307,777,117	\$1.56	32,581,178	\$4.74	\$1,004,757,617	\$2,873,808	\$1,007,631,425
2011Q1	303,971,918	\$1,526,485,048	\$5.02	92.4%	-68.5%	-0.2%	280,813,286	\$1.46	23,158,632	\$4.62	\$1,000,941,818	\$9,366,831	\$1,010,308,649
2011Q2	319,678,317	\$1,611,187,175	\$5.04	93.6%	-71.5%	3.1%	299,227,963	\$1.32	20,450,354	\$4.77	\$1,113,632,837	\$5,519,185	\$1,119,152,022
2011Q3	312,062,380	\$1,520,652,211	\$4.87	94.6%	-71.9%	14.7%	295,140,673	\$1.30	16,921,707	\$5.31	\$1,054,078,744	\$0	\$1,054,078,744
2011Q4	321,987,932	\$1,641,033,084	\$5.10	95.4%	-71.4%	16.1%	307,148,610	\$1.32	14,839,322	\$5.37	\$1,159,534,852	\$0	\$1,159,534,852
2012Q1	264,078,806	\$1,359,897,049	\$5.15	96.6%	-75.9%	19.3%	255,164,285	\$1.11	8,914,521	\$5.52	\$1,029,642,594	\$0	\$1,029,642,594
2012Q2	283,790,829	\$1,482,450,406	\$5.22	96.7%	-75.9%	18.8%	274,328,575	\$1.11	9,462,254	\$5.50	\$1,127,317,500	\$0	\$1,127,317,500
2012Q3	286,007,757	\$1,495,738,212	\$5.23	97.3%	-75.9%	28.8%	278,313,585	\$1.11	7,694,172	\$5.96	\$1,145,354,595	\$0	\$1,145,354,595
2012Q4	296,550,930	\$1,616,111,381	\$5.45	97.1%	-75.9%	29.8%	288,029,984	\$1.11	8,520,946	\$6.01	\$1,248,701,836	\$0	\$1,248,701,836
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.9%	-75.9%	30.3%	241,120,928	\$1.11	7,692,486	\$6.03	\$1,065,429,666	\$0	\$1,065,429,666
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.9%	-75.9%	36.4%	275,798,740	\$1.11	8,798,812	\$6.31	\$1,276,734,916	\$0	\$1,276,734,916
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-75.9%	40.0%	254,553,059	\$1.11	8,121,011	\$6.48	\$1,187,477,189	\$0	\$1,187,477,189
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-75.9%	43.6%	249,263,559	\$1.11	7,952,260	\$6.65	\$1,190,052,988	\$0	\$1,190,052,988
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-75.9%	47.2%	162,649,373	\$1.11	5,189,006	\$6.81	\$794,314,817	\$0	\$794,314,817

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = G.1.c Column 11.
- 5 = G.1.c Column 12.
- 6 = G.1.c Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2009Q4 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2009Q4 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10).
- 13 = Column 11 + Column 12.

If the but-for price is greater than the actual price, set to zero.



**Attachment G.5: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2010Q3**

Scenario 1.C

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2010Q2	342,909,973	\$1,645,068,869	\$4.80				217,279,041	\$2.84	118,906,423	\$4.70	\$402,768,697	\$0	\$402,768,697
2010Q3	336,185,463	\$1,578,344,774	\$4.69	64.6%	-40.8%	-2.0%	293,577,687	\$2.77	46,780,609	\$4.49	\$604,393,916	\$15,725,221	\$620,119,137
2010Q4	340,358,296	\$1,643,480,690	\$4.83	86.3%	-42.3%	-6.4%	269,713,327	\$1.70	34,258,591	\$4.72	\$897,018,277	\$10,281,792	\$907,300,069
2011Q1	303,971,918	\$1,526,485,048	\$5.02	88.7%	-64.6%	-1.6%	289,076,753	\$1.62	30,601,564	\$4.91	\$988,262,114	\$3,859,237	\$992,121,351
2011Q2	319,678,317	\$1,611,187,175	\$5.04	90.4%	-66.2%	2.4%	288,287,363	\$1.51	23,775,018	\$4.79	\$969,289,331	\$2,059,955	\$971,349,286
2011Q3	312,062,380	\$1,520,652,211	\$4.87	92.4%	-68.5%	-0.2%	301,389,828	\$1.37	20,598,104	\$4.94	\$1,124,182,065	\$3,128,786	\$1,127,310,851
2011Q4	321,987,932	\$1,641,033,084	\$5.10	93.6%	-71.5%	3.1%	249,759,027	\$1.35	14,319,779	\$5.50	\$949,210,503	\$0	\$949,210,503
2012Q1	264,078,806	\$1,359,897,049	\$5.15	94.6%	-71.9%	14.7%	270,711,880	\$1.37	13,078,949	\$5.57	\$1,043,320,513	\$0	\$1,043,320,513
2012Q2	283,790,829	\$1,482,450,406	\$5.22	95.4%	-71.4%	16.1%	276,352,979	\$1.16	9,654,778	\$5.73	\$1,126,018,647	\$0	\$1,126,018,647
2012Q3	286,007,757	\$1,495,738,212	\$5.23	96.6%	-75.9%	19.3%	286,663,224	\$1.16	9,887,706	\$5.70	\$1,231,088,738	\$0	\$1,231,088,738
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.7%	-75.9%	18.8%	242,119,843	\$1.16	6,693,571	\$6.18	\$1,059,971,876	\$0	\$1,059,971,876
2013Q1	248,813,414	\$1,376,691,190	\$5.53	97.3%	-75.9%	28.8%	276,420,070	\$1.16	8,177,483	\$6.23	\$1,268,341,063	\$0	\$1,268,341,063
2013Q2	284,597,553	\$1,634,614,615	\$5.74	97.1%	-75.9%	29.8%	254,553,059	\$1.16	8,121,011	\$6.25	\$1,177,098,618	\$0	\$1,177,098,618
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.9%	-75.9%	30.3%	249,263,559	\$1.16	7,952,260	\$6.54	\$1,179,890,080	\$0	\$1,179,890,080
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-75.9%	36.4%	162,649,373	\$1.16	5,189,006	\$6.72	\$787,683,319	\$0	\$787,683,319
2014Q1	167,838,379	\$1,006,690,517	\$6.00	96.9%	-75.9%	40.0%							

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = G.1.c Column 11.
- 5 = G.1.c Column 12.
- 6 = G.1.c Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2010Q2 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2010Q2 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment G.6: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2011Q1**

Scenario 1.C

Quarter	1	2	3	4	5	6	7	8	9	10	11	12	13
	Actual Nexium Purchases			Yardsticks		But-For Purchases		But-For Purchases		Overcharges		Overcharges	
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2010Q4	340,358,296	\$1,643,480,690	\$4.83	64.6%	-40.8%	-2.0%	196,459,199	\$2.86	107,512,719	\$4.73	\$424,762,361	\$31,232,157	\$455,994,518
2011Q1	303,971,918	\$1,526,485,048	\$5.02	86.3%	-42.3%	-6.4%	275,740,071	\$2.79	43,938,246	\$4.52	\$620,965,211	\$22,768,164	\$643,733,375
2011Q2	319,678,317	\$1,611,187,175	\$5.04	88.7%	-64.6%	-1.6%	276,891,969	\$1.71	35,170,412	\$4.75	\$876,604,161	\$4,235,636	\$880,839,797
2011Q3	312,062,380	\$1,520,652,211	\$4.87	90.4%	-66.2%	2.4%	291,165,277	\$1.63	30,822,655	\$4.95	\$1,008,784,758	\$4,641,669	\$1,013,426,426
2011Q4	321,987,932	\$1,641,033,084	\$5.10	92.4%	-68.5%	-0.2%	243,959,501	\$1.52	20,119,305	\$4.82	\$885,342,179	\$6,681,486	\$892,023,665
2012Q1	264,078,806	\$1,359,897,049	\$5.15	93.6%	-71.5%	3.1%	265,636,257	\$1.38	18,154,572	\$4.98	\$1,022,235,650	\$4,480,767	\$1,026,716,416
2012Q2	283,790,829	\$1,482,450,406	\$5.22	94.6%	-71.9%	14.7%	270,498,872	\$1.36	15,508,885	\$5.54	\$1,047,324,948	\$0	\$1,047,324,948
2012Q3	286,007,757	\$1,495,738,212	\$5.23	95.4%	-71.4%	16.1%	282,883,912	\$1.38	13,667,018	\$5.61	\$1,151,620,739	\$0	\$1,151,620,739
2012Q4	296,550,930	\$1,616,111,381	\$5.45	96.6%	-75.9%	19.3%	240,414,207	\$1.16	8,399,207	\$5.76	\$1,050,692,899	\$0	\$1,050,692,899
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.7%	-75.9%	18.8%	275,108,401	\$1.16	9,489,152	\$5.74	\$1,260,249,147	\$53,733	\$1,260,302,880
2013Q2	284,597,553	\$1,634,614,615	\$5.74	97.3%	-75.9%	28.8%	255,607,621	\$1.16	7,066,450	\$6.22	\$1,180,048,683	\$0	\$1,180,048,683
2013Q3	262,674,071	\$1,518,078,347	\$5.78	97.1%	-75.9%	29.8%	249,825,109	\$1.16	7,390,710	\$6.27	\$1,180,665,345	\$0	\$1,180,665,345
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.9%	-75.9%	30.3%	162,649,373	\$1.16	5,189,006	\$6.29	\$786,457,495	\$0	\$786,457,495
2014Q1	167,838,379	\$1,006,690,517	\$6.00										

Total

\$12,495,753,575 \$74,093,611 \$12,569,847,185

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = G.1.c Column 11.
- 5 = G.1.c Column 12.
- 6 = G.1.c Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2010Q4 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2010Q4 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.



**Attachment G.7: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2011Q3**

Scenario 1.C

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges		
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Brand Overcharges	Total Overcharges
2011Q2	319,678,317	\$1,611,187,175	\$5.04	64.6%	-40.8%	-2.0%	201,688,122	\$2.98	110,374,259	\$4.94	\$0	\$380,794,556
2011Q3	312,062,380	\$1,520,652,211	\$4.87	86.3%	-42.3%	-6.4%	277,732,241	\$2.91	44,255,691	\$4.72	\$16,675,898	\$607,262,933
2011Q4	321,987,932	\$1,641,033,084	\$5.10	88.7%	-64.6%	-1.6%	234,316,294	\$1.78	29,762,512	\$4.96	\$5,627,964	\$789,137,808
2012Q1	264,078,806	\$1,359,897,049	\$5.15	90.4%	-66.2%	2.4%	256,624,634	\$1.70	27,166,194	\$5.16	\$1,664,926	\$903,419,948
2012Q2	283,790,829	\$1,482,450,406	\$5.22	92.4%	-68.5%	-0.2%	264,217,756	\$1.59	21,790,001	\$5.03	\$4,387,604	\$962,446,239
2012Q3	286,007,757	\$1,495,738,212	\$5.23	93.6%	-71.5%	3.1%	277,580,074	\$1.44	18,970,856	\$5.19	\$4,836,130	\$1,114,205,991
2012Q4	296,550,930	\$1,616,111,381	\$5.45	94.6%	-71.9%	14.7%	235,321,407	\$1.42	13,492,007	\$5.78	\$0	\$968,514,201
2013Q1	248,813,414	\$1,376,691,190	\$5.53	95.4%	-71.4%	16.1%	271,481,425	\$1.44	13,116,128	\$5.85	\$0	\$1,168,609,332
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.6%	-75.9%	19.3%	253,806,969	\$1.21	8,867,102	\$6.02	\$0	\$1,158,819,519
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.7%	-75.9%	18.8%	248,639,639	\$1.21	8,576,180	\$5.99	\$0	\$1,162,409,614
2013Q4	257,215,820	\$1,514,653,791	\$5.89	97.3%	-75.9%	28.8%	163,323,196	\$1.21	4,515,183	\$6.49	\$0	\$781,404,132
2014Q1	167,838,379	\$1,006,690,517	\$6.00									
Total											\$33,192,521	\$10,030,216,795

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = G.1.c Column 11.
- 5 = G.1.c Column 12.
- 6 = G.1.c Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2011Q2 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2011Q2 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment G.8: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2012Q1**

Scenario 1.C

Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases			Overcharges		Total Overcharges
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	
2011Q4	321,987,932	\$1,641,033,084	\$5.10	64.6%	-40.8%	-2.0%	170,675,998	\$3.02	93,402,807	\$4.99	\$363,749,523
2012Q1	264,078,806	\$1,359,897,049	\$5.15	86.3%	-42.3%	-6.4%	244,785,146	\$2.94	39,005,683	\$4.77	\$558,363,521
2012Q2	283,790,829	\$1,482,450,406	\$5.22	88.7%	-64.6%	-1.6%	253,773,783	\$1.80	32,233,974	\$5.02	\$869,928,232
2012Q3	286,007,757	\$1,495,738,212	\$5.23	90.4%	-66.2%	2.4%	268,163,261	\$1.72	28,387,669	\$5.22	\$999,507,522
2012Q4	296,550,930	\$1,616,111,381	\$5.45	92.4%	-68.5%	-0.2%	229,857,129	\$1.60	18,956,285	\$5.08	\$902,909,848
2013Q1	248,813,414	\$1,376,691,190	\$5.53	93.6%	-71.5%	3.1%	266,391,374	\$1.45	18,206,179	\$5.25	\$1,143,298,575
2013Q2	284,597,553	\$1,634,614,615	\$5.74	94.6%	-71.9%	14.7%	248,430,464	\$1.43	14,243,606	\$5.85	\$1,079,704,850
2013Q3	262,674,071	\$1,518,078,347	\$5.78	95.4%	-71.4%	16.1%	245,361,622	\$1.46	11,854,197	\$5.92	\$1,087,803,415
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.6%	-75.9%	19.3%	162,172,651	\$1.23	5,665,728	\$6.08	\$773,691,603
2014Q1	167,838,379	\$1,006,690,517	\$6.00								
Total											\$7,778,957,090
											\$62,968,111
											\$7,841,925,201

Notes:

- 1 = C.1 Column 1.
- 2 = C.1 Column 2.
- 3 = C.1 Column 3.
- 4 = G.1.c Column 11.
- 5 = G.1.c Column 12.
- 6 = G.1.c Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2011Q4 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2011Q4 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10).
- 13 = Column 11 + Column 12.

If the but-for price is greater than the actual price, set to zero.

**Attachment H**

**Attachment H.1: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2011Q2**

Scenario 2.A

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2011Q1	303,971,918	\$1,526,485,048	\$5.02										
2011Q2	319,678,317	\$1,611,187,175	\$5.04	64.6%	-40.8%	-2.0%	206,610,355	\$2.97	113,067,962	\$4.92	\$426,846,368	\$13,512,076	\$440,358,444
2011Q3	312,062,380	\$1,520,652,211	\$4.87	86.3%	-42.3%	-6.4%	269,170,909	\$2.90	42,891,472	\$4.70	\$531,175,113	\$7,301,145	\$538,476,258
2011Q4	321,987,932	\$1,641,033,084	\$5.10	88.7%	-42.3%	-1.6%	285,698,879	\$2.90	36,289,053	\$4.94	\$627,689,273	\$5,589,141	\$633,278,414
2012Q1	264,078,806	\$1,359,897,049	\$5.15	90.4%	-42.3%	2.4%	238,799,567	\$2.90	25,279,239	\$5.14	\$537,311,414	\$146,734	\$537,458,147
2012Q2	283,790,829	\$1,482,450,406	\$5.22	92.4%	-42.3%	-0.2%	262,169,729	\$2.90	21,621,100	\$5.01	\$609,336,734	\$4,617,784	\$613,954,518
2012Q3	286,007,757	\$1,495,738,212	\$5.23	93.6%	-42.3%	3.1%	267,711,365	\$2.90	18,296,392	\$5.18	\$623,814,578	\$983,131	\$624,797,709
2012Q4	296,550,930	\$1,616,111,381	\$5.45	94.6%	-42.3%	14.7%	280,470,338	\$2.90	16,080,592	\$5.76	\$715,243,222	\$0	\$715,243,222
2013Q1	248,813,414	\$1,376,691,190	\$5.53	95.4%	-42.3%	16.1%	237,346,455	\$2.90	11,466,959	\$5.83	\$625,049,584	\$0	\$625,049,584
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.6%	-42.3%	19.3%	274,990,379	\$2.90	9,607,174	\$5.99	\$782,090,311	\$0	\$782,090,311
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.7%	-42.3%	18.8%	253,915,899	\$2.90	8,758,171	\$5.97	\$731,223,723	\$0	\$731,223,723
2013Q4	257,215,820	\$1,514,653,791	\$5.89	97.3%	-42.3%	28.8%	250,296,207	\$2.90	6,919,612	\$6.47	\$748,163,726	\$0	\$748,163,726
2014Q1	167,838,379	\$1,006,690,517	\$6.00	97.1%	-42.3%	29.8%	163,015,795	\$2.90	4,822,584	\$6.52	\$505,094,590	\$0	\$505,094,590
Total											\$7,463,038,636	\$32,150,011	\$7,495,188,646

Notes:

- 1 = C.1 Column 4.
- 2 = C.1 Column 5.
- 3 = C.1 Column 6.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2011Q1 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2011Q1 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment H.2: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2011Q4**

Scenario 2.A

Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases		Overcharges		Total Overcharges
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)
2011Q3	312,062,380	\$1,520,652,211	\$4.87	64.6%	-40.8%	-2.0%	208,103,076	\$2.89	113,884,856	\$4.77
2011Q4	321,987,932	\$1,641,033,084	\$5.10	86.3%	-42.3%	-6.4%	227,782,445	\$2.81	36,296,360	\$4.56
2012Q1	264,078,806	\$1,359,897,049	\$5.15	88.7%	-42.3%	-1.6%	251,806,710	\$2.81	31,984,119	\$4.80
2012Q2	283,790,829	\$1,482,450,406	\$5.22	90.4%	-42.3%	2.4%	258,629,344	\$2.81	27,378,412	\$4.99
2012Q3	286,007,757	\$1,495,738,212	\$5.23	92.4%	-42.3%	-0.2%	273,957,679	\$2.81	22,593,251	\$4.86
2012Q4	296,550,930	\$1,616,111,381	\$5.45	93.6%	-42.3%	3.1%	232,896,406	\$2.81	15,917,008	\$5.02
2013Q1	248,813,414	\$1,376,691,190	\$5.53	94.6%	-42.3%	14.7%	269,165,137	\$2.81	15,432,416	\$5.59
2013Q2	284,597,553	\$1,634,614,615	\$5.74	95.4%	-42.3%	16.1%	250,568,321	\$2.81	12,105,749	\$5.66
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.6%	-42.3%	19.3%	248,532,972	\$2.81	8,682,847	\$5.82
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.7%	-42.3%	18.8%	162,242,253	\$2.81	5,596,126	\$5.79
2014Q1	167,838,379	\$1,006,690,517	\$6.00							

Total

\$6,392,157,476 \$105,179,886 \$6,497,337,361

Notes:

- 1 = C.1 Column 4.
- 2 = C.1 Column 5.
- 3 = C.1 Column 6.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2011Q3 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2011Q3 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment H.3: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2012Q2**

Scenario 2.A

Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases			Overcharges			
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Brand Overcharges	Total Overcharges
2012Q1	264,078,806	\$1,359,897,049	\$5.15									
2012Q2	283,790,829	\$1,482,450,406	\$5.22	64.6%	-40.8%	-2.0%	183,416,018	\$3.05	100,374,811	\$5.05	\$398,743,252	\$17,867,337
2012Q3	286,007,757	\$1,495,738,212	\$5.23	86.3%	-42.3%	-6.4%	246,697,368	\$2.97	39,310,389	\$4.82	\$556,645,532	\$16,013,225
2012Q4	296,550,930	\$1,616,111,381	\$5.45	88.7%	-42.3%	-1.6%	263,128,708	\$2.97	33,422,222	\$5.07	\$651,604,221	\$12,746,154
2013Q1	248,813,414	\$1,376,691,190	\$5.53	90.4%	-42.3%	2.4%	224,995,471	\$2.97	23,817,942	\$5.27	\$575,921,944	\$6,153,293
2013Q2	284,597,553	\$1,634,614,615	\$5.74	92.4%	-42.3%	-0.2%	262,914,991	\$2.97	21,682,562	\$5.14	\$728,347,767	\$13,138,312
2013Q3	262,674,071	\$1,518,078,347	\$5.78	93.6%	-42.3%	3.1%	245,870,373	\$2.97	16,803,697	\$5.31	\$689,912,606	\$7,925,119
2013Q4	257,215,820	\$1,514,653,791	\$5.89	94.6%	-42.3%	14.7%	243,268,189	\$2.97	13,947,630	\$5.91	\$709,206,473	\$0
2014Q1	167,838,379	\$1,006,690,517	\$6.00	95.4%	-42.3%	16.1%	160,103,282	\$2.97	7,735,097	\$5.98	\$484,257,013	\$143,821

Total \$4,794,638,808 \$73,987,262 \$4,868,626,070

Notes:

- 1 = C.1 Column 4.
- 2 = C.1 Column 5.
- 3 = C.1 Column 6.
- 4 = C.2.a Column 11.
- 5 = C.2.a Column 12.
- 6 = C.2.a Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2012Q1 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2012Q1 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment I**

**Attachment I.1: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2011Q2**

Scenario 2.B

Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases			Overcharges		Total Overcharges
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	
2011Q1	303,971,918	\$1,526,485,048	\$5.02	64.6%	-40.8%	-2.0%	206,610,355	\$2.97	113,067,962	\$4.92	\$440,358,444
2011Q2	319,678,317	\$1,611,187,175	\$5.04	86.3%	-42.3%	-6.4%	269,170,909	\$2.90	42,891,472	\$4.70	\$538,476,258
2011Q3	312,062,380	\$1,520,652,211	\$4.87	88.7%	-42.3%	-1.6%	285,698,879	\$2.90	36,289,053	\$4.94	\$633,278,414
2011Q4	321,987,932	\$1,641,033,084	\$5.10	90.4%	-42.3%	2.4%	238,799,567	\$2.90	25,279,239	\$5.14	\$537,458,147
2012Q1	264,078,806	\$1,359,897,049	\$5.15	92.4%	-63.4%	-0.2%	262,169,729	\$1.84	21,621,100	\$5.01	\$891,742,864
2012Q2	283,790,829	\$1,482,450,406	\$5.22	93.6%	-64.0%	3.1%	267,711,365	\$1.81	18,296,392	\$5.18	\$917,432,656
2012Q3	286,007,757	\$1,495,738,212	\$5.23	94.6%	-64.0%	14.7%	280,470,338	\$1.81	16,080,592	\$5.76	\$1,021,824,986
2012Q4	296,550,930	\$1,616,111,381	\$5.45	95.4%	-64.0%	16.1%	237,346,455	\$1.81	11,466,959	\$5.83	\$884,492,687
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.6%	-64.0%	19.3%	274,990,379	\$1.81	9,607,174	\$5.99	\$1,082,681,940
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.7%	-64.0%	18.8%	253,915,999	\$1.81	8,758,171	\$5.97	\$1,008,778,865
2013Q3	262,674,071	\$1,518,078,347	\$5.78	97.3%	-64.0%	28.8%	250,296,207	\$1.81	6,919,612	\$6.47	\$1,021,762,187
2013Q4	257,215,820	\$1,514,653,791	\$5.89	97.1%	-64.0%	29.8%	163,015,795	\$1.81	4,822,584	\$6.52	\$683,286,946
2014Q1	167,838,379	\$1,006,690,517	\$6.00								
Total											

\$9,629,424,385 \$32,150,011 \$9,661,574,395

Notes:

- 1 = C.1 Column 4.
- 2 = C.1 Column 5.
- 3 = C.1 Column 6.
- 4 = C.2.b Column 11.
- 5 = C.2.b Column 12.
- 6 = C.2.b Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2011Q1 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2011Q1 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.



**Attachment I.2: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2011Q4**

Scenario 2.B

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges		
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Brand Overcharges	Total Overcharges
2011Q3	312,062,380	\$1,520,652,211	\$4.87	64.6%	-40.8%	-2.0%	208,103,076	\$2.89	113,884,856	\$4.77	\$36,662,647	\$496,708,638
2011Q4	321,987,932	\$1,641,033,084	\$5.10	86.3%	-42.3%	-6.4%	227,782,445	\$2.81	36,296,360	\$4.56	\$21,281,466	\$553,385,079
2012Q1	264,078,806	\$1,359,897,049	\$5.15	88.7%	-42.3%	-1.6%	251,806,710	\$2.81	31,984,119	\$4.80	\$13,680,541	\$620,578,012
2012Q2	283,790,829	\$1,482,450,406	\$5.22	90.4%	-42.3%	2.4%	258,629,344	\$2.81	27,378,412	\$4.99	\$6,527,848	\$631,412,766
2012Q3	286,007,757	\$1,495,738,212	\$5.23	92.4%	-63.4%	-0.2%	273,957,679	\$1.79	22,593,251	\$4.86	\$13,286,355	\$1,017,144,458
2012Q4	296,550,930	\$1,616,111,381	\$5.45	93.6%	-64.0%	3.1%	232,896,406	\$1.75	15,917,008	\$5.02	\$8,125,703	\$888,508,099
2013Q1	248,813,414	\$1,376,691,190	\$5.53	94.6%	-64.0%	14.7%	269,165,137	\$1.75	15,432,416	\$5.59	\$2,354,296	\$1,076,516,962
2013Q2	284,597,553	\$1,634,614,615	\$5.74	95.4%	-64.0%	16.1%	250,568,321	\$1.75	12,105,749	\$5.66	\$1,467,229	\$1,010,366,214
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.6%	-64.0%	19.3%	248,532,972	\$1.75	8,682,847	\$5.82	\$632,740	\$1,028,507,688
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.7%	-64.0%	18.8%	162,242,253	\$1.75	5,596,126	\$5.79	\$1,161,061	\$689,894,868
2014Q1	167,838,379	\$1,006,690,517	\$6.00									
Total											\$7,907,842,898	\$8,013,022,784

Notes:

- 1 = C.1 Column 4.
- 2 = C.1 Column 5.
- 3 = C.1 Column 6.
- 4 = C.2.b Column 11.
- 5 = C.2.b Column 12.
- 6 = C.2.b Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2011Q3 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2011Q3 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment I.3: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2012Q2**

Scenario 2.B

Quarter	Actual Nexium Purchases			Yardsticks			But-For Purchases			Overcharges			
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2012Q1	264,078,806	\$1,359,897,049	\$5.15										
2012Q2	283,790,829	\$1,482,450,406	\$5.22	64.6%	-40.8%	-2.0%	183,416,018	\$3.05	100,374,811	\$5.05	\$398,743,252	\$17,867,337	\$416,610,589
2012Q3	286,007,757	\$1,495,738,212	\$5.23	86.3%	-42.3%	-6.4%	246,697,368	\$2.97	39,310,389	\$4.82	\$556,645,532	\$16,013,225	\$572,658,757
2012Q4	296,550,930	\$1,616,111,381	\$5.45	88.7%	-42.3%	-1.6%	263,128,708	\$2.97	33,422,222	\$5.07	\$651,604,221	\$12,746,154	\$664,350,374
2013Q1	248,813,414	\$1,376,691,190	\$5.53	90.4%	-42.3%	2.4%	224,995,471	\$2.97	23,817,942	\$5.27	\$575,921,944	\$6,153,293	\$582,075,237
2013Q2	284,597,553	\$1,634,614,615	\$5.74	92.4%	-63.4%	-0.2%	262,914,991	\$1.89	21,682,562	\$5.14	\$1,014,014,863	\$13,138,312	\$1,027,153,176
2013Q3	262,674,071	\$1,518,078,347	\$5.78	93.6%	-64.0%	3.1%	245,870,373	\$1.85	16,803,697	\$5.31	\$965,512,455	\$7,925,119	\$973,437,575
2013Q4	257,215,820	\$1,514,653,791	\$5.89	94.6%	-64.0%	14.7%	243,268,189	\$1.85	13,947,630	\$5.91	\$981,889,494	\$0	\$981,889,494
2014Q1	167,838,379	\$1,006,690,517	\$6.00	95.4%	-64.0%	16.1%	160,103,282	\$1.85	7,735,097	\$5.98	\$663,719,223	\$143,821	\$663,863,044

Total

\$5,808,050,984 \$73,987,262 \$5,882,038,246

Notes:

- 1 = C.1 Column 4.
- 2 = C.1 Column 5.
- 3 = C.1 Column 6.
- 4 = C.2.b Column 11.
- 5 = C.2.b Column 12.
- 6 = C.2.b Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2012Q1 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2012Q1 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment J**

**Attachment J.1: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2011Q2**

Scenario 2.C

Quarter	1	2	3	4	5	6	7	8	9	10	11	12	13
Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases		But-For Purchases		Overcharges		Overcharges	
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Generic Overcharges	Brand-Brand Overcharges	Total Overcharges
2011Q1	303,971,918	\$1,526,485,048	\$5.02	64.6%	-40.8%	-2.0%	206,610,355	\$2.97	113,067,962	\$4.92	\$426,846,368	\$13,512,076	\$440,358,444
2011Q2	319,678,317	\$1,611,187,175	\$5.04	86.3%	-42.3%	-6.4%	269,170,909	\$2.90	42,891,472	\$4.70	\$531,175,113	\$7,301,145	\$538,476,258
2011Q3	312,062,380	\$1,520,652,211	\$4.87	88.7%	-64.6%	-1.6%	285,698,879	\$1.78	36,289,053	\$4.94	\$948,878,934	\$5,589,141	\$954,468,075
2011Q4	321,987,932	\$1,641,033,084	\$5.10	90.4%	-66.2%	2.4%	238,799,567	\$1.70	25,279,239	\$5.14	\$824,431,732	\$146,734	\$824,578,466
2012Q1	264,078,806	\$1,359,897,049	\$5.15	92.4%	-68.5%	-0.2%	262,169,729	\$1.58	21,621,100	\$5.01	\$954,926,202	\$4,617,784	\$959,543,986
2012Q2	283,790,829	\$1,482,450,406	\$5.22	93.6%	-71.5%	3.1%	267,711,365	\$1.43	18,296,392	\$5.18	\$1,017,091,971	\$983,131	\$1,018,075,102
2012Q3	286,007,757	\$1,495,738,212	\$5.23	94.6%	-71.9%	14.7%	280,470,338	\$1.41	16,080,592	\$5.76	\$1,132,399,172	\$0	\$1,132,399,172
2012Q4	296,550,930	\$1,616,111,381	\$5.45	95.4%	-71.4%	16.1%	237,346,455	\$1.43	11,466,959	\$5.83	\$972,929,573	\$0	\$972,929,573
2013Q1	248,813,414	\$1,376,691,190	\$5.53	96.6%	-75.9%	19.3%	274,990,379	\$1.21	9,607,174	\$5.99	\$1,246,921,370	\$0	\$1,246,921,370
2013Q2	284,597,553	\$1,634,614,615	\$5.74	96.7%	-75.9%	18.8%	253,915,999	\$1.21	8,758,171	\$5.97	\$1,160,431,452	\$0	\$1,160,431,452
2013Q3	262,674,071	\$1,518,078,347	\$5.78	97.3%	-75.9%	28.8%	250,296,207	\$1.21	6,919,612	\$6.47	\$1,171,252,895	\$0	\$1,171,252,895
2013Q4	257,215,820	\$1,514,653,791	\$5.89	97.1%	-75.9%	29.8%	163,015,795	\$1.21	4,822,584	\$6.52	\$780,648,975	\$0	\$780,648,975
2014Q1	167,838,379	\$1,006,690,517	\$6.00										

Total

\$11,167,933,759 \$32,150,011 \$11,200,083,769

Notes:

- 1 = C.1 Column 4.
- 2 = C.1 Column 5.
- 3 = C.1 Column 6.
- 4 = C.2.e Column 11.
- 5 = C.2.e Column 12.
- 6 = C.2.e Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2011Q1 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2011Q1 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment J.2: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2011Q4**

Scenario 2.C

Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases			Overcharges		Total Overcharges
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	
2011Q3	312,062,380	\$1,520,652,211	\$4.87	64.6%	-40.8%	-2.0%	208,103,076	\$2.89	113,884,856	\$4.77	\$496,708,638
2011Q4	321,987,932	\$1,641,033,084	\$5.10	86.3%	-42.3%	-6.4%	227,782,445	\$2.81	36,296,360	\$4.56	\$553,385,079
2012Q1	264,078,806	\$1,359,897,049	\$5.15	88.7%	-64.6%	-1.6%	251,806,710	\$1.72	31,984,119	\$4.80	\$895,272,350
2012Q2	283,790,829	\$1,482,450,406	\$5.22	90.4%	-66.2%	2.4%	258,629,344	\$1.65	27,378,412	\$4.99	\$933,156,029
2012Q3	286,007,757	\$1,495,738,212	\$5.23	92.4%	-68.5%	-0.2%	273,957,679	\$1.53	22,593,251	\$4.86	\$1,085,893,588
2012Q4	296,550,930	\$1,616,111,381	\$5.45	93.6%	-71.5%	3.1%	232,896,406	\$1.39	15,917,008	\$5.02	\$973,466,544
2013Q1	248,813,414	\$1,376,691,190	\$5.53	94.6%	-71.9%	14.7%	269,165,137	\$1.37	15,432,416	\$5.59	\$1,179,487,982
2013Q2	284,597,553	\$1,634,614,615	\$5.74	95.4%	-71.4%	16.1%	250,568,321	\$1.39	12,105,749	\$5.66	\$1,100,961,635
2013Q3	262,674,071	\$1,518,078,347	\$5.78	96.6%	-75.9%	19.3%	248,532,972	\$1.17	8,682,847	\$5.82	\$1,172,544,444
2013Q4	257,215,820	\$1,514,653,791	\$5.89	96.7%	-75.9%	18.8%	162,242,253	\$1.17	5,596,126	\$5.79	\$783,922,021
2014Q1	167,838,379	\$1,006,690,517	\$6.00								
Total											\$9,069,618,423 \$105,179,886 \$9,174,798,309

Notes:

- 1 = C.1 Column 4.
- 2 = C.1 Column 5.
- 3 = C.1 Column 6.
- 4 = C.2.e Column 11.
- 5 = C.2.e Column 12.
- 6 = C.2.e Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2011Q3 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2011Q3 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

**Attachment J.3: Nexium Direct Purchaser Overcharges Assuming Generic Launch in 2012Q2**

Scenario 2.C

Quarter	Actual Nexium Purchases			Yardsticks		But-For Purchases			Overcharges				
	Quantity (Pills)	Net Sales	Average Sales Price (\$/Pill)	Generic Market Share	Generic Price Change	Brand Price Change	Generic Units (Pills)	Generic Price (\$/Pill)	Brand Units (Pills)	Brand Price (\$/Pill)	Brand-Brand Overcharges	Brand-Brand Overcharges	Total Overcharges
2012Q1	264,078,806	\$1,359,897,049	\$5.15										
2012Q2	283,790,829	\$1,482,450,406	\$5.22	64.6%	-40.8%	-2.0%	183,416,018	\$3.05	100,374,811	\$5.05	\$398,743,252	\$17,867,337	\$416,610,589
2012Q3	286,007,757	\$1,495,738,212	\$5.23	86.3%	-42.3%	-6.4%	246,697,368	\$2.97	39,310,389	\$4.82	\$556,645,532	\$16,013,225	\$572,658,757
2012Q4	296,550,930	\$1,616,111,381	\$5.45	88.7%	-64.6%	-1.6%	263,128,708	\$1.82	33,422,222	\$5.07	\$954,947,687	\$12,746,154	\$967,693,841
2013Q1	248,813,414	\$1,376,691,190	\$5.53	90.4%	-66.2%	2.4%	224,995,471	\$1.74	23,817,942	\$5.27	\$853,329,038	\$6,153,293	\$859,482,331
2013Q2	284,597,553	\$1,634,614,615	\$5.74	92.4%	-68.5%	-0.2%	262,914,991	\$1.62	21,682,562	\$5.14	\$1,083,738,990	\$13,138,312	\$1,096,877,302
2013Q3	262,674,071	\$1,518,078,347	\$5.78	93.6%	-71.5%	3.1%	245,870,373	\$1.47	16,803,697	\$5.31	\$1,060,296,223	\$7,925,119	\$1,068,221,343
2013Q4	257,215,820	\$1,514,653,791	\$5.89	94.6%	-71.9%	14.7%	243,268,189	\$1.45	13,947,630	\$5.91	\$1,080,237,493	\$0	\$1,080,237,493
2014Q1	167,838,379	\$1,006,690,517	\$6.00	95.4%	-71.4%	16.1%	160,103,282	\$1.47	7,735,097	\$5.98	\$724,892,863	\$143,821	\$725,036,684

Total

\$6,712,831,078 \$73,987,262 \$6,786,818,340

Notes:

- 1 = C.1 Column 4.
- 2 = C.1 Column 5.
- 3 = C.1 Column 6.
- 4 = C.2.e Column 11.
- 5 = C.2.e Column 12.
- 6 = C.2.e Column 13.
- 7 = Column 1 \* Column 4.
- 8 = Column 3 in 2012Q1 \* (1 + Column 5).
- 9 = Column 1 \* (1 - Column 4).
- 10 = Column 3 in 2012Q1 \* (1 + Column 6).
- 11 = Column 7 \* (Column 3 - Column 8).
- 12 = Column 9 \* (Column 3 - Column 10). If the but-for price is greater than the actual price, set to zero.
- 13 = Column 11 + Column 12.

## Exhibit 3

## Rebuttal Declaration of Raymond S. Hartman

### EXECUTIVE SUMMARY

I have been asked by counsel for the named plaintiffs and the Class of direct purchasers in this matter<sup>1</sup> to review and analyze the report submitted by defendants' expert, Dr. John H. Johnson, IV.<sup>2</sup> Having reviewed and analyzed his report, I conclude that my opinions regarding class-wide impact, injury and damages and the appropriate class-wide methodology and data remain unchanged.

Specifically, Dr. Johnson offers opinions regarding variability in the prices of Nexium and variation among Class members, incorrectly concluding that class-wide impact cannot be proven using a common methodology<sup>3</sup> and class-wide data, and that class-wide damages cannot be calculated on an aggregate basis. These opinions fail as a matter of economics, economic modeling and the standard analytic business practices of the pharmaceutical manufacturers.

If the generic for Nexium had come to market but-for the challenged conduct, it would have sold for substantially lower prices than branded Nexium and would have captured the vast majority of branded sales. All or virtually all Class members would have purchased the generic at substantially lower prices. As I discussed in my prior declaration on class certification issues:

(1) data on the quantities of branded Nexium purchased by Class members and the prices they paid were obtained from defendant AstraZeneca;

(2) numerous government and academic studies have shown time and time again that generics quickly replace brands and at prices substantially below the pre-generic brand price, including a 2010 study by the FTC that found that, on average, within a year

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<sup>1</sup> *In re: Nexium (Esomeprazole) Antitrust Litigation*; MDL No. 2409, Civil Action No. 12-md-02409-WGY, US District Court for the District of Massachusetts. I understand that Dr. Johnson's report is in response to my Declaration in Support of the Certification of the Class of Direct Purchasers of Nexium submitted July 26, 2013 (hereafter Hartman July 2013 Declaration). Also note that subsequent to my July 2013 Declaration I received updated chargeback data, and I revised my calculations accordingly in Supplemental Declaration of Raymond S. Hartman in Support of the Certification of the Class of Direct Purchasers of Nexium, August 15, 2013 (hereafter Hartman Supplemental). I understand that this supplemental report was inadvertently not served on defendants, although my later merits report on damages, dated August 23, 2013, was and that report also incorporates complete chargeback data.

<sup>2</sup> Expert Report of Dr. John H. Johnson, IV on Direct Purchaser Class Certification, September 11, 2013 (hereafter Johnson Report).

<sup>3</sup> By "common methodology" or "common evidence" in this report, I mean common to the proposed direct purchaser class as a whole (as distinguished from methodologies or evidence that are individual to its members).



of generic entry, generics capture 90% of the brand's prescriptions and generic prices are 85% lower than the pre-generic brand prices;<sup>4</sup>

(3) defendants' own internal forecasts of the effects of entry of generic versions of Nexium show that defendants expected much this same pattern to apply to Nexium upon generic entry;

(4) AstraZeneca explicitly looked to data regarding "analogs" or other drugs that have undergone generic competition in order to model the expected effects of generic entry on Nexium, the same approach I take in using the benchmark drug Prevacid; and

(5) Class members here are all resellers and primarily wholesalers serving a wide customer base that includes pharmacies, and because pharmacies (and other purchasers) would need to stock at least some amount of generic Nexium when it became available, so too would wholesalers.<sup>5</sup>

All of this common evidence shows that, if a generic form of Nexium had been available by now, all or virtually all Class members would have purchased some amount of the generic at a price below the brand.<sup>6</sup> Hence, conduct that unlawfully prevented a generic version of Nexium from coming to market caused all or virtually all Class members to suffer antitrust impact in the form of overcharges.

Dr. Johnson does not dispute the findings of the government and academic studies concerning the effects of generic competition, nor the conclusions of defendants' own forecasts or their use of analog drugs. He cites one class member, DMS Pharmaceutical Group Inc., which received an average net price on Nexium that is below the but for prices that I have calculated for generic Nexium. But even DMS paid an average brand price far above AstraZeneca's estimate of its internal cost of producing its own "authorized generic" version of Nexium,<sup>7</sup> strongly suggesting that a generic would have underpriced Nexium even for DMS.<sup>8</sup> In short, nothing Dr. Johnson offers can change the fundamental facts of generic competition – demonstrated time and again – that generics rapidly replace the brand and at substantially lower prices. No individualized inquiry of Class members is needed to conclude that this same pattern would have occurred with generic forms of Nexium. Similarly, as I set forth in my prior report, damages may be

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<sup>4</sup> FTC, Pay-for-Delay: How Drug Company Pay-Offs Cost Consumers Billions, An FTC Staff Study, January 2010.

<sup>5</sup> Dr. Johnson testified that he is not aware of any pharmacy in the United States that buys only branded drugs (Deposition of John Johnson, September 13, 2013 (hereafter Johnson Deposition), p. 33). Nor am I.

<sup>6</sup> Also note that I find that the Class would have been overcharged on brand purchases as well (Hartman July 2013 Declaration, ¶ 63).

<sup>7</sup> See NEX-RBX 3514340-2 at 40. The implied cost of manufacturing an authorized generic capsule in this document is approximately \$0.15 per capsule.

<sup>8</sup> Dr. Johnson also discussed Good Samaritan Hosp. & Hlth, but as I discuss below, that class member paid an average net branded price that is higher than my estimate of the but for generic price at the time of that class member's brand purchase (October 2008). Thus, Dr. Johnson's critique amounts to a claim that one class member (DMS) perhaps was not overcharged.

reliably calculated on an aggregate, class-wide basis for the same reasons, namely, the predictability of the effects of generic competition. I presented such a calculation in my opening report (revised in my merits report dated August 23, 2013).

Dr. Johnson claims there is variation in the net brand prices Class members paid for Nexium, and likely would be variation in the prices and quantities of generic Nexium they would have purchased had generics become available. Such variation is beside the point. Common evidence still shows that all or virtually all Class members would have purchased some amount of generic Nexium at a price below the brand, had generics been available in 2008 or other times that Plaintiffs allege. And common evidence, including the use of an analog or benchmark drug (Prevacid), can still permit the reliable calculation of class-wide damages on an aggregate basis (as I demonstrate below). Whether Class members paid different prices for Nexium, or would have paid different prices for generic esomeprazole magnesium or purchased different amounts of the generic, are issues that are irrelevant to the calculation of class-wide damages on an aggregate basis, or to the proof of class-wide antitrust impact through predominantly common evidence. Variation may be addressed, as needed, in connection with the allocation of damages after a trial has set the amount of class-wide damages, but does not affect or detract from the accuracy of the aggregate calculation or the proof of class-wide antitrust impact.

As demonstrated in this rebuttal declaration, after critiquing Dr. Johnson's report, I continue to conclude the following:

- Class-wide analysis can be done despite possible variations among Class members.
- Class-wide damage calculations may be done using standard and well-accepted methodologies. Defendants are incorrect in suggesting that damages can only be calculated by summing the damages of each individual Class member. Their assertions contradict basic economic, statistical and business premises.
- As a matter of economics, my damage calculations are reliable and a reasonable calculation of aggregate Class damages. My assumptions regarding my yardsticks for generic penetration and generic price erosion are all appropriate. Furthermore, my damages methodology is adaptable to alternative but-for world scenarios. Thus, if the facts regarding, *e.g.*, but-for generic entry, turn out to be different from my assumptions, I can easily adjust my model to accurately calculate damages.
- All Class members who purchased Nexium in the actual world were foreclosed from the opportunity to switch to the generic form. All or virtually all would have purchased some amount of the generic had it become available. While the variations across different purchasers may produce different prices and quantities over time, the difference between the patent-monopoly price of Nexium and the competitive but-for price of esomeprazole magnesium is sufficiently great over the Damage Period that all or virtually all Class members who would have

switched to the generic were overcharged by being prevented from buying the generic.

In what follows, I review and analyze Dr. Johnson's expert report. After presenting my qualifications in Section I, I summarize my analysis in Section II. In the subsequent Sections III and IV, I address in more detail Dr. Johnson's assertions and demonstrate how and why they fail. I find that his report does not alter my conclusions that, given the facts and characteristics of the antitrust market at issue here and given the nature of the alleged unlawful acts by the defendants, common evidence shows that all or virtually all members of the Class of direct purchasers would have switched from Nexium to the generic form of esomeprazole magnesium and they paid more for Nexium than they would have paid for the generic absent the alleged generic foreclosure by the defendants and consequently suffered antitrust injury.

## **I. QUALIFICATIONS**

1. My name is Raymond S. Hartman. I am Director and President of Greylock McKinnon Associates (GMA), a consulting and litigation support firm located in Cambridge, Massachusetts.
2. Since I have presented my qualifications in my affirmative declaration of July 26, 2013, I do not repeat them here. I had access to additional discovery materials produced in this matter and considered a variety of additional materials in forming my opinions expressed here. Attachment A summarizes the additional materials I have relied upon and cited.

## **II. OVERVIEW AND SUMMARY**

3. The analysis and assertions made by the defendants' expert fail for the following reasons, which I develop more fully in Sections III and IV below.
4. Dr. Johnson suggests, incorrectly, that this marketplace is so complicated and is characterized by so much variation across purchasers, their contracts, and customers, that aggregate class-wide analysis is simply impossible. Dr. Johnson spends virtually his entire report developing all the ways that direct purchasers may differ. Dr. Johnson implies that it is impossible to make any generalizations about drug markets without examining every transaction related to every purchase by every direct purchaser and their customers at every point in time.
  - These assertions make no sense. As I discuss below, this market is less complex than many markets and, most importantly, the basic effects of generic competition – sharply lower prices and a rapid switch in purchases from the brand to the generic – have been repeatedly demonstrated and at this point are beyond genuine scientific dispute. Even the simplest market for a homogeneous product is characterized by some variations across sellers, buyers, transactions and prices.

For that reason, analyses of all markets make use of measures (e.g., averages) summarizing the dispersions of variables due to variations.

- Dr. Johnson appears to be suggesting that class actions are just impossible because economic analysis is impossible unless every individual is analyzed and the results summed to market results. That conclusion makes no sense, given the clear reliance by the economics profession upon aggregate statistical models that summarize patterns across large groups of individuals. Over the last sixty years, quantitative economists have developed standard methods of characterizing such variation, *using sample data, not data for the entire population* being studied. This marketplace, the institutional entities in this market and the products in the marketplace are not more complicated or subject to more variations than other markets for which statistical analysis has been performed and used for policy analysis and in support of litigation.
- Variability may exist in the quantum of damages experienced by Class members. But that does not diminish an economist's ability to perform an accurate calculation of class-wide damages. That calculation can indeed be performed using average prices and the methods I originally implemented. This aggregate calculation is not vitiated by variation in prices, customer, or purchasing power among Class members. The use of average prices and market shares found in my July 2013 Declaration is common to an extensive literature analyzing aggregate economic impact in markets with as much variability as this market or more. *Indeed, as I demonstrate below, the use of averages yield exact measures of damages summed over all relevant class members.*
- The methods that I used are common to the economics profession. Indeed, methods similar to those that I have used have been used by the defendants in their own analyses with respect to Nexium and the expected effects of generic competition to Nexium.

5. The defendants appear to argue that class-wide damage calculations must be composed of a summing of individualized damage calculations.

- Dr. Johnson confuses the calculation of aggregate class-wide damages with the plan of distribution that will govern the amounts of damages to be assigned to individual Class members after trial.
- As I understand it, the relevant questions at this point are whether antitrust impact may be demonstrated on a class-wide basis using evidence and methodologies that are predominantly common and class-wide rather than individual, and whether damages to the proposed class as a whole may be reliably calculated on an aggregate, class-wide basis. The answer to both questions is "yes." There is no need to proceed by calculating and summing the individual damages of each and every Class member for each and every transaction. Again, as I noted above, I will demonstrate below that the use of averages yields exact measures of damages summed over all relevant Class members.

- After an award of aggregate damages to the Class, there can be a plan to allocate damages to Class members in a fair and reasonable way according to applicable legal standards. I have assisted in preparing such plans in the past and, if asked, will do so here. Those considerations are not currently addressed because they are not issues that affect the amount of aggregate Class damages or the fact of antitrust injury.

6. Dr. Johnson asserts that my damage calculations are incorrect for a variety of reasons. He is wrong. Given the assumptions I have taken as my point of departure, my choices of market yardsticks for generic penetration and for generic price erosion are appropriate. Because there has not yet been generic entry for Nexium, I use another drug as a yardstick or benchmark, just as AstraZeneca itself has done. The yardsticks I have chosen are appropriate for the calculation of damages in this matter. They accord with market patterns found with generic entry for other molecules.

### **III. MY FORMULAIC METHODS CAN BE USED TO DETERMINE DAMAGES ON AN AGGREGATE CLASS-WIDE BASIS**

#### **A. Arguments by Dr. Johnson**

7. Dr. Johnson suggests, incorrectly, that the variation in the terms of purchase and the characteristics of the horizontal and vertical entities in this market make it impossible to calculate class-wide damages.<sup>9</sup> If one were to believe this assertion, one would conclude that the markets for pharmaceutical products are so extraordinarily complex, complicated and variegated that they defy quantitative analysis, strategic analysis and market forecasting. In fact, the suggestion is contradicted by the numerous studies that have examined the effects of generic competition, and the studies of defendants themselves looking at the expected effects of generic competition for Nexium. The effects of generic competition have been extensively studied, and reliable conclusions have been reached, without the need to examine each individual purchaser or price paid.

8. Dr. Johnson asserts, incorrectly, that he has “examined the data and find[s] that there are major variations on many crucial factors, such that Dr. Hartman’s methodology cannot prove that all class members were injured, or the amount of their damages.”<sup>10</sup> He also mischaracterizes my testimony by stating that, by using averages and yardsticks relating to generic penetration, I have assumed that there is “uniform” pricing among Class members, “uniformity” of generic switching among Class members, and that generic prices have a “constant” relationship to brand prices.<sup>11</sup>

<sup>9</sup> However, Dr. Johnson testified that he was not offering some general opinion that the calculation of aggregate damages is impossible in a class action (Johnson Deposition, pp. 82-83).

<sup>10</sup> Johnson Report, ¶ 7.

<sup>11</sup> Johnson Report, ¶¶ 16 and 28-34.



## B. The Arguments of Dr. Johnson Fail

9. The basic, fundamental and market-wide effects of the entry of AB-rated generic drugs (including an authorized generic) are simple and unmistakable. Within a short time, the vast bulk of prescriptions for the brand are filled with the generic, at prices that are substantially below the pre-generic brand price. Given the predictable and market-wide effects of generic competition, it is not difficult for an economist to model the expected effects of generic competition for a particular brand drug, and I have done so here and in my prior work. I have proffered models and methods that have abstracted from the complexities of these markets to allow me to opine on class-wide impact and calculate class-wide damages in a variety of matters.<sup>12</sup> The consulting analyses conducted by Drs. Schondelmeyer and Wrobel of Abt Associates have done the same.<sup>13</sup> This is just one of many research articles, published papers and consulting reports that address the issues arising within these markets.

10. Dr. Johnson's implication that this industry is too complex to allow for industry-wide analysis is contradicted by the numerous studies that have examined the effects of generic competition, as well as by the forecasts developed by defendants themselves.

11. Indeed, all econometric analysis and forecasting of markets proceeds on the basis that it is not necessary to individually examine each individual transaction or potential transaction in order to develop and reach reliable conclusions about the expected effects of various market events. For example, econometric analysis is designed to rely upon sample data for a limited number of variables, rather than all data summarizing all information for a population being studied. In this sense, it is analogous to the calculation of averages in this matter. Averages are used to characterize the variability and draw conclusions about aggregate economic impacts. Defendants themselves used averages and aggregate data in their business planning and did not examine individual transactions or variation in reaching market-wide conclusions about the expected effects of generic competition for Nexium. If Dr. Johnson were correct, then it would seem that antitrust damages can never be calculated for a class or for a large distinct group of plaintiffs, unless every purchase by every buyer is separately analyzed.

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<sup>12</sup> See, for example, *In re Pharmaceutical Industry Average Wholesale Price Litigation*, United States District Court for the District of Massachusetts, MDL No. 1456, Civil Action: 01-CV-12257-PBS; *In re Lupron Marketing and Sales Practices Litigation*, United States District Court for the District of Massachusetts, MDL No. 1430, Case No. 01-CV-10861; *In re Buspirone Antitrust Litigation*, United States District Court for the Southern District of New York, MDL No. 1413; *In re Relafen Antitrust Litigation*, United States District Court for the District of Massachusetts, Master File No. 01-CV-12222-WGY; *Susannah K. Alexander, et al., v. Solvay Pharmaceuticals, Inc.*, Superior Court of the State of California for the County of Los Angeles, Case No. BC 300364. The Alexander Action was consolidated with the case of *Dr. Sherrel Howard v. Solvay Pharmaceuticals, Inc. et al.*, Superior Court of the State of California for the County of Los Angeles, Case No. BC 325120; and *In re Terazosin Hydrochloride Antitrust Litigation*, United States District Court for the Southern District of Florida, Case No. 99-MDL-1317 Seitz/Garber.

<sup>13</sup> Stephen W. Schondelmeyer and Marion V. Wrobel, "Medicaid and Medicare Drug Pricing: Strategy to Determine Market Prices, Final Report," Abt Associates Inc., Prepared for Centers for Medicare and Medicaid Services, 2004.

12. All real-world markets are characterized by variability. That does not render the use of averages inappropriate or mean that one cannot draw valid conclusions from averages. The opposite is true.

13. More specifically, a scientific paper by Alan Sorenson<sup>14</sup> analyzes variations in retail markets for prescription drugs in New York State. Not surprisingly, the research finds variation in the prices of prescription drugs in two towns in New York State. Any student of pharmaceutical markets understands that such variation exists.

14. The relevant question is whether such variation, or any variation, prevents the analysis of common economic impacts. The very first sentence of the Sorenson article states, “The proverbial ‘law of one price’ is virtually never empirically valid. Homogeneous goods are often sold at widely different prices by rival firms, even in environments that seem particularly conducive to economic competition.” Hence, variation characterizes even the most simple homogeneous-product markets.

- a) If the position of Dr. Johnson is that no quantitative analysis can be conducted without data on each and every transaction and potential transaction of every member of a population being studied, under every possible condition in which transactions took place, little or no economic analysis would ever be possible. Such a contention is meritless.
- b) If Dr. Johnson’s position is that no analysis making use of average prices and average market shares is possible in markets in which there exists price variability (that is, in markets that do not conform to the proverbial “law of one price”), the logical conclusion is that innovator and generic drug manufacturers would never waste resources to develop and rely upon yardstick models that calculate and forecast average price discounts that will be offered by generic manufacturers; the market share that will be captured by generics; the market share that will be retained by the branded drug; or the average net price at which the innovator drug manufacturer will be able to sell the branded drug.

This conclusion is obviously wrong. All drug manufacturers, including the defendants, develop such models and make such calculations as a regular part of their business planning.<sup>15</sup>

- c) If the position of Dr. Johnson is that no analysis making use of average prices and average market shares is possible in markets in which there exists price variability (that is, in markets that do not conform to the proverbial “law of one price”), the

<sup>14</sup> A. Sorensen, “Equilibrium Price Dispersion in Retail Markets for Prescription Drugs,” *Journal of Political Economy*, 108(4), pp. 833-850, August 2000.

<sup>15</sup> See the following as cited in Hartman July 2013 Declaration, ¶ 32: NEX-RBX 3514366, NEX-RBX 3505840 – 850, DRLMDL 179342-348, RAN-ESM 0194086 – 105 at 087-088, RAN-ESM 0134201 – 220 at 202-203, RAN-ESM 0462697-725 at 705-706 and Teva-ESO-065243.

logical conclusion is that none of the scientific research cited in my July 2013 Declarations in this matter is valid.<sup>16</sup>

This conclusion is untenable as that research is widely recognized as the leading research in its field.

- d) If Dr. Johnson's position is that aggregate antitrust damages cannot be readily calculated or analyzed in markets in which there exists price variability (that is, that do not conform to the proverbial "law of one price"), the logical conclusion is that antitrust damages can never be calculated.<sup>17</sup> That conclusion is untenable.

15. I conclude therefore the following:

- a) The belabored recitation by Dr. Johnson of variability is contrived and fails. All markets are characterized by variability, even the most simplistic competitive markets with homogenous products. Economists have spent the last 60 years developing and using what have become standard quantitative methods to summarize market impacts and market changes in terms of average prices, market shares and aggregate calculations, without studying each and every consumer purchase by day of purchase, point of sale, and reason for purchase. The market for the delayed-releaseesomeprazole magnesium in the United States is no different. This market is certainly no more complicated than many markets subjected to standard economic analyses; no more complicated than many markets in which classes have been certified; and no more complicated than many markets in which aggregate antitrust damages have been calculated. Indeed, this market is less complicated and varied than others that have been subject to economic analysis.
- b) The methods that I have used in my July 2013 Declaration are standard economic methods for analyzing and calculating the aggregate economic impact of the but-for entry of genericesomeprazole magnesium. These calculations are then used to accurately measure overcharge damages incurred by the Class as a whole.

<sup>16</sup> See the following as cited in Hartman July 2013 Declaration, footnote 39: Federal Trade Commission (FTC), Generic Drug Entry Prior to Patent Expiration: An FTC Study, July 2002; FTC, Pay-for-Delay: How Drug Company Pay-Offs Cost Consumers Billions, An FTC Staff Study, January 2010; D. Suh, W. Manning, S. Schondelmeyer, and R. Hadsall, "Effect of Multiple-Source Entry on Price Competition After Patent Expiration in the Pharmaceutical Industry," *Health Services Research*, 35(2), 2000, pp. 529-547; Congressional Budget Office (CBO), "How Increased Competition From Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry," Washington D.C., July 1998; H. Grabowski and J. Vernon, "Brand Loyalty, Entry, and Price Competition in Pharmaceuticals after the 1984 Drug Act," *Journal of Law and Economics*, 35(2), 1992, pp. 331-350; R. Frank and D. Salkever, "Generic Entry and the Pricing of Pharmaceuticals," *Journal of Economics and Management Strategy*, 6(1), 1997, pp. 75-90; R. Caves, M. Whinston, and M. Hurwitz, "Patent Expiration, Entry, and Competition in the U.S. Pharmaceutical Industry," *Brookings Papers: Microeconomics*, 1991, pp. 1-48; D. Reiffen and M. Ward, "Generic Drug Industry Dynamics," *Review of Economics and Statistics*, 87(1), 2005, pp. 37-49; and A. Saha, H. Grabowski, H. Birnbaum, P. Greenberg, and O. Bizan, "Generic Competition in the US Pharmaceutical Industry," *International Journal of the Economics of Business*, 13(1), 2006, pp. 15-38.

<sup>17</sup> Dr. Johnson does not appear to be asserting this (Johnson Deposition, pp. 82-83).



- c) While the variations across different purchasers may produce different amounts paid over time, the point is that at any specific moment in time in the but-for world, the generic form of esomeprazole magnesium would have been cheaper than the branded form. The difference between the patent-monopoly price of Nexium and the but-for price of generic esomeprazole magnesium is such that in my opinion all or virtually all Class members purchasing Nexium experienced antitrust injury because they would have purchased some amount of generic Nexium had it been available, and at a price below the price of the brand. By being prevented from buying the less expensive generic version of Nexium, therefore, class members were overcharged.
- d) Dr. Johnson identifies one direct purchaser (DMS Pharmaceutical Group) with a low average net price and defendants claim that this purchaser did not experience antitrust injury because they compare this price to the average but-for generic price.<sup>18</sup> Standard economic theory suggests that this purchaser, given its contracts with such entities as those under the Department of Defense (DOD), would likely have paid still-lower but-for generic prices than the average.<sup>19</sup> Further, this purchaser would likely have also paid lower branded prices in the but-for world, as it would continue to realize net prices based on special DOD pricing. Also, as mentioned above, the DMS net price is still well above the per-unit cost of an authorized generic version of Nexium, which shows that there was ample room for its net pricing to be competed down further in the but-for world compared with the actual world. In summary, it is likely that DMS was injured because it would have paid even lower brand prices in the but-for world, or, alternatively, it would have paid prices for the generic that were lower than the pre-generic brand prices it actually paid. That DMS has paid pre-generic brand prices that are lower than the *average* but-for generic prices I have calculated is simply not determinative.
- e) Dr. Johnson also suggests that Good Samaritan Hospital & Health might not have been injured because it might not have purchased any generic. However, Dr. Johnson fails to note that the average price paid by Good Samaritan for Nexium, \$1.94 per pill,<sup>20</sup> was paid in 2008Q4, during which the but-for generic price I calculated was much lower: \$1.55 per pill.<sup>21</sup> Therefore, on average, the price that would have been paid by Good Samaritan Hospital for generic esomeprazole magnesium would have been less than what it paid for Nexium, thus indicating

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<sup>18</sup> Johnson Report, footnote 22.

<sup>19</sup> The prices available to the Department of Defense and the Veterans' Administration are subject to significant price concessions that would most likely affect generic Nexium as well. See General Accountability Office, Comparison of DOD and VA Direct Purchase Prices, April 2013, p. 4.

<sup>20</sup> Johnson Report, Exhibit 6.

<sup>21</sup> Supplemental Declaration, Attachment C.3.

that Good Samaritan Hospital was injured by being unable to purchase the less expensive generic.<sup>22</sup>

- f) My opinion remains unchanged: all or virtually all Class members suffered antitrust injury assuming generic competition for Nexium was unlawfully delayed.

**C. Reliance upon Market-Wide Averages Provides Exact Measures of Damages**

16. Let me demonstrate how the reliance upon market-wide averages can and does provide *exact measures* of overcharge damages that would be calculated if I identified and added up the damages of each and every direct purchaser.

17. Dr. Johnson suggests that substantial variation among the prices paid by direct Class members makes the accurate calculation of aggregate damages impossible, thus implying that one must calculate and sum the damages incurred by each purchaser. This assertion does not withstand scrutiny.

18. To demonstrate, consider the following hypothetical below: Four direct purchasers pay varying prices per unit for varying quantities of a branded product in the actual world. They then purchase varying amounts of the generic product in the but-for world, and their switched generic purchases fall on different positions on the generic price distribution curve. Prices are in given terms of dollars per unit (*e.g.*, a bottle of 30 pills).

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<sup>22</sup> In addition, I note that Dr. Johnson concedes that DMS Pharmaceutical Group and Good Samaritan Hospital would be class members in only the first but-for entry scenario. Thus, Dr. Johnson's concerns as to the price variability reflected in the pricing patterns for these Class members disappear entirely for the second and third proposed but-for entry scenarios. See Johnson Report, Exhibit 3 on p. 13.

Purchaser	Actual World			But-For World					
	Brand Quantity	Brand Price	Total Spending	Generic Share	Generic Quantity	Generic Price	Brand Quantity	Brand Price	Total Spending
Customer A	250	\$100.00	\$25,000	90%	225	\$70.00	25	\$95.00	\$18,125
Customer B	50	\$110.00	\$5,500	70%	35	\$60.00	15	\$109.00	\$3,735
Customer C	100	\$105.00	\$10,500	80%	80	\$80.00	20	\$105.00	\$8,500
Customer D	1,000	\$100.00	\$100,000	50%	500	\$50.00	500	\$100.00	\$75,000
Weighted Avg.		\$100.7143				\$58.631		\$100.1964	
Totals	1,400		\$141,000		840		560		\$105,360

## Overcharge Calculations

Totals by Individual Purchaser:Customer A:  $(\$100 - \$70) * 225 + (\$100 - \$95) * 25 = \$6,875$ Customer B:  $(\$110 - \$60) * 35 + (\$110 - \$109) * 15 = \$1,765$ Customer C:  $(\$105 - \$80) * 80 + (\$105 - \$105) * 20 = \$2,000$ Customer D:  $(\$100 - \$50) * 500 + (\$100 - \$100) * 500 = \$25,000$ Total = **\$35,640**Total Using Aggregate Averages: $(\$100.7143 - \$58.631) * 840 + (\$100.7143 - \$100.1964) * 560 = \$35,640$ 

19. We learn the following from this hypothetical:<sup>23</sup>

- Use of averages provides an exact measure of aggregate damages calculated by analyzing each and every class member.
- This is true even though both brand and generic prices vary across each class member.
- This is true even though each class member has a different generic substitution percentage.
- The accurate calculation of aggregate damages does not require that purchasers maintain their comparable positions with respect to each other on the brand price distribution curve and the generic price distribution curve.

20. I conclude the following.

- a) *As a matter of mathematical equivalence*, the summation of individual damage measures to the purchasers on each and every transaction subject to damages can be calculated exactly by either summing up all of those damages or by taking the average measure of damages to the Class members and multiplying times the

<sup>23</sup> This hypothetical is only an illustrative example used to show how average prices summarize Class member experiences, and I am not suggesting that prices and quantities for actual Class members would have varied as they do here.

number of transaction (units) subject to damages. This is true regardless of the number of class members or the extent of the variation among class members.

- b) Economists, businesses and governments use averages routinely to make reliable calculations and forecasts, as I have done.
- c) The hypothetical that I used was for four purchasers, but this hypothetical can be extended in any way and the results would be the same. Using averages yields accurate class-wide damages regardless of the variation in prices or other components of the purchasers.
- d) Any suggestion by Dr. Johnson that aggregate analysis cannot accurately measure the totality of individualized behavior (based upon individualized financial considerations) of many varied entities is incorrect.

#### **D. My Methodology and Data Are Standard, Correct and Used Extensively**

21. My calculations of aggregate class-wide damages are appropriate and accurate for the but-for world I was asked to assume for the antitrust market I have appropriately defined.<sup>24</sup> I have formulated, estimated, and implemented models to assess generic penetration and generic price erosion. The models are standard to the scientific literature; to the strategic business forecasting analyses conducted by defendants and essentially all drug manufacturers; and to the damage analyses I have submitted in other litigation in which I have testified.<sup>25</sup> I have estimated the models using AstraZeneca's transactional data and IMS data, data which are considered the gold standard data for this industry. I have used the type of data that the defendants themselves used in their strategic planning for Nexium and its generic during the relevant period.<sup>26</sup>

22. While variability may exist in the quantum of damages experienced by different groups of eligible Class members at different times during the Damage Period (as it does in every class action), that variation does not prevent the reliable calculation of aggregate damages.

23. I have performed and presented that calculation of aggregate damages in my July 2013 Declaration.<sup>27</sup> The use of average prices and market shares upon which I have relied is common to an extensive literature analyzing aggregate economic impact in markets with as much variability as this market. The methods that I have used are common to the economics profession.

<sup>24</sup> See Report of Raymond S. Hartman on Market Definition, August 23, 2013.

<sup>25</sup> For examples, see Hartman July 2013 Declaration, footnotes 2-28.

<sup>26</sup> See footnote 15 above.

<sup>27</sup> I have also presented revised calculations in my Report of Raymond S. Hartman, Calculation of Damages for the Class of Direct Purchasers of Nexium, August 23, 2013.

24. I understand that at a later time in this litigation, I may be asked to allocate damages between Class members. I have performed such analyses of allocation before. I can do so here. My allocation analyses have been accepted by a variety of Courts in the past.<sup>28</sup>

#### **E. All or Virtually All Class Members Suffered Antitrust Injury**

25. Entry of the AB-rated generic form of any branded incumbent molecule is the single most significant event creating economic benefit to customers already buying the incumbent drug. That benefit is a substantial reduction in the price of the molecule. Foreclosure and delay of generic entry have been and are injurious to purchasers of Nexium. That injury has been substantial.

26. Plaintiffs allege that had it not been for the defendants' alleged illegal activities, generics would have launched well before today. Had generic competition begun, the prices of esomeprazole magnesium would have dropped substantially.

27. Instead, generic launch was delayed, allegedly unlawfully. As a result, AstraZeneca maintained its patent monopoly position and prices that would have resulted for the esomeprazole magnesium molecule stayed well in excess of the prices had the generics launched. Had generic entry occurred, all or virtually all Class members would have substituted at least some amount of the less expensive generic for their purchases of the brand. Hence, conduct that unlawfully delayed generic competition has resulted in all or virtually all Class members suffering antitrust injury in the form of overcharges.

28. I conclude that all or virtually all members of the Class suffered an injury in the form of paying higher prices for esomeprazole magnesium (sold as Nexium) than they would have had there been no delay in the entry of generic esomeprazole magnesium. The factors that affected this injury are common to the Class as a whole. Similarly, as shown in my July 2013 Declaration, I have calculated class-wide damages based on available class-wide data that did not require the use of data about individual Class members.

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<sup>28</sup> For examples, *In re Lupron Marketing and Sales Practices Litigation*, United States District Court for the District of Massachusetts, MDL No. 1430, Case No. 01-CV-10861; *In re Relafen Antitrust Litigation*, United States District Court for the District of Massachusetts, Master File No. 01-CV-12222-WGY; *HIP Health Plan of Florida, Inc., On Behalf of Itself and All Others Similarly Situated v. Bristol-Myers Squibb Co. and American Bioscience*, United States District Court for the District of Columbia, Case No. 1:01CV01295; *In re Buspirone Antitrust Litigation*, United States District Court for the Southern District of New York, MDL No. 1413; *In re Remeron Antitrust Litigation*, United States District Court for the District of New Jersey, Master Docket No. 02-CV-2007; *In re New England Carpenters Health Benefits Fund, et al., v. First Databank, Inc., and McKesson Corporation*, United States District Court for the District of Massachusetts, C.A. No. 1:05-CV-11148-PBS; and *In re Tricor Indirect Purchaser Antitrust Litigation*, United States District Court for the District of Delaware, CA No. 05-360 (KAJ).

#### IV. OTHER ITEMS RAISED BY DR. JOHNSON

29. Dr. Johnson raises several other issues that I discuss here.

##### *The Class has a limited number of members*

30. Dr. Johnson says that the Class would have between 24 and 29 Class members depending on the start date for the calculation of damages.<sup>29</sup> The issue of numerosity, however, is a legal matter as I understand it.

##### *Dr. Johnson incorrectly claims that I have ignored Class differences*

31. Dr. Johnson claims that I have ignored variation among Class members and have done no analysis regarding this variation. As discussed above in Section III, the particular forms of variation to which Dr. Johnson alludes are not relevant to the calculation of class-wide aggregate damages or the proof of antitrust impact on a common, class-wide basis. The issues to which he alludes are issues that will and can be addressed instead at the allocation phase of this litigation.

32. Dr. Johnson criticizes my assertion that, as he puts it, “firms that pay relatively low brand prices also pay relatively low generic prices.”<sup>30</sup> In other words, he disagrees with my point that a particular firm would maintain its relative position on both the brand and generic price distribution curves. Here again, this is not important for the determination of impact and the calculation of aggregate damages. As mentioned above in Section III, any variation of the prices paid is appropriately captured in the average. Given that generic esomeprazole magnesium prices would have been dramatically lower than branded Nexium prices, and given that the vast majority of purchases would have switched to the generic, it is my opinion that all or virtually all Class members experienced impact and have been harmed, regardless of their relative positions on the price distribution curves.

##### *Dr. Johnson incorrectly criticizes my assumptions about generic switching*

33. Dr. Johnson criticizes my assumption that “with generic entry, the branded drug would lose sales only to the generic equivalent.”<sup>31</sup> He claims that not all units that would have switched away from Nexium in the but-for world would have switched to generic esomeprazole magnesium, *i.e.*, he claims some units would have switched to some other drug. To support this, he mentions a document relating to my yardstick drug, Prevacid. Dr. Johnson states that “it appears that as much as 20% of the net losses from brand Prevacid went to products other than its own generic” such as “brand Nexium, brand Dexilant, and generic Prilosec.”<sup>32</sup> However, Dr. Johnson fails to note that branded

<sup>29</sup> Johnson Report, ¶¶ 11-13.

<sup>30</sup> Johnson Report, ¶ 28.

<sup>31</sup> Johnson Report, ¶ 38.

<sup>32</sup> Johnson Report, ¶ 38.



Dexilant is a line-extension of Prevacid,<sup>33</sup> and consequently there is no doubt the manufacturer of Prevacid made a particular effort to convert sales to this new drug. I am unaware of any evidence that there would have been a line extension for Nexium in any of the but-for scenarios I have been asked to analyze. Regardless, the yardstick I use, which focuses on the relative shares between Prevacid and generic Prevacid, is an accurate estimation of the but-for world and is in fact more conservative than some of the models used by defendants, as I pointed out in my July 2013 Declaration.<sup>34</sup>

34. Dr. Johnson also introduces variability in the switching rates of different channels of trade.<sup>35</sup> There is no reason to believe the variability Dr. Johnson is alluding to would result in uninjured Class members. For the reasons discussed above in Section III, this argument fails.

***Quarters with negative brand-brand damages***

35. Dr. Johnson is correct that I do not include quarters with negative damages when I calculate brand-brand damages.<sup>36</sup> I was asked by counsel to zero out negative damages and I was informed that this was a legal matter. However, if I do not do so, the quantum of damages decreases by only 0.51%.<sup>37</sup> In terms of unit volume, only about 2.4% of total Class sales would be subject to negative brand-brand damages.<sup>38</sup> Furthermore, given that 97% of the Nexium units would have been converted to generic esomeprazole magnesium, and given the extended length of time of the damage period, it is extremely unlikely that any given Class member would have made only branded Nexium purchases in the but-for world.

***Dr. Johnson incorrectly claims that I use uniform prices across direct purchasers***<sup>39</sup>

36. I do not use *uniform* prices. I use *average* prices to calculate damages. As discussed above, the use of such average prices is appropriate for the calculation of class-wide damages.

***Dr. Johnson mentions that I have not addressed retailers with assignments and have not excluded them from the class***<sup>40</sup>

37. Dr. Johnson is correct that I have not addressed these retailers (*i.e.*, retailers who may opt out of the Class). I have not yet been asked to do so by counsel, but can do so if

<sup>33</sup> See Takeda Annual Report, 2010, p. 27.

<sup>34</sup> Hartman July 2013 Declaration, ¶ 32.

<sup>35</sup> Johnson Report, ¶¶ 34-35.

<sup>36</sup> Johnson Report, ¶ 45.

<sup>37</sup> See Supplemental Declaration, Attachment C.3, where Column 12 is allowed to be negative.

<sup>38</sup> See Supplemental Declaration, Attachment C.3.

<sup>39</sup> Johnson Report, ¶ 16.

<sup>40</sup> Johnson Report, ¶¶ 40-42.

required. Subtracting the assigned units would be a simple mathematical exercise. My methodology allows me to exclude entities should I be asked to do so by counsel. I have done so in a variety of other matters. I have reviewed the data provided in the backup to the report of Dr. Leffler, and I conclude that the data exist to allow the exclusion of those potential opt outs from the calculation of my damages should it be deemed appropriate.<sup>41</sup>

***Dr. Johnson notes that I did not account for generic bypass***<sup>42</sup>

38. Dr. Johnson is correct that I have not accounted for generic bypass in my calculation of damages. However, as I mentioned in my July 2013 Declaration, I did so at the request of counsel.<sup>43</sup> Further, I understand that Judge Young has previously ruled that the exclusion of generic bypass is not appropriate in these matters. However, should I be asked to address this issue, my methodology allows me to do so.

39. It is important to note that if potential opt-out purchasers are netted out of my calculation of aggregate damages, the bypass issue would be substantially reduced as a potential adjustment to damages. This is because the potential opt-out entities tend to be large retail chains – the same type of customer that brings about the phenomenon of generic bypass. In other words, if the brand units claimed by assignment by these opt-out chains are excluded from my analysis, there will be much less bypass to consider.

***Whether certain discounts to direct purchasers should be deducted***

40. Dr. Johnson claims that I have not accounted for all discounts in my calculation of net prices paid for Nexium by the Class.<sup>44</sup> In reviewing some of the materials provided by Dr. Johnson relating to AstraZeneca data documentation, it appears that Dr. Johnson was provided with AstraZeneca “data dictionaries” that I had not previously been provided. A review of this documentation in Dr. Johnson’s work papers helps to clarify some of the issues I had previously raised with AstraZeneca.<sup>45</sup> I have not accounted for a relatively small amount of discounts due to lack of information provided by the defendants prior to the calculation of my damages. Based on the new information Dr. Johnson was given by AstraZeneca (and which I now have access to as well), I will incorporate these additional discounts into my damages calculations with updated calculations in my rebuttal merits report. These adjustments do not alter my methodology nor do they change any of my conclusions relating to class-wide impact or

<sup>41</sup> One way that this may be done is by deducting both units and dollar sales from my calculation of Class Nexium volume and prices.

<sup>42</sup> Johnson Report, ¶¶ 43-44.

<sup>43</sup> Hartman July 2013 Declaration, ¶ 55.

<sup>44</sup> Johnson Report, footnote 19: “Dr. Hartman did not include the full amount of chargebacks received by direct purchasers in his quarterly average prices calculation. In addition to this error, Dr. Hartman also excludes valuable discounts to direct purchasers, including prompt payment discounts, wholesaler distribution service agreements credits, redistribution center agreements credits, and direct rebates to Express Scripts’ mail order business.” Note that I have included the full amount of chargebacks in my Supplemental Declaration of August 15, 2013 and in my Damages Declaration of August 23, 2013.

<sup>45</sup> See the July 15, 2013 letter from T. Sobol and the September 6, 2013 letter from D. Sorensen.

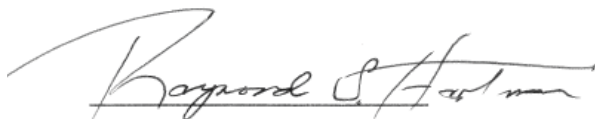


my ability to reliably calculate class-wide, aggregate damages; they simply change the quantum of damages.

41. Further, as Dr. Johnson points out, rebates paid to the Medco mail order service (a subsidiary of Express Scripts) should be subtracted from the Express Scripts purchases. Although these rebates may be a result of PBM functions, I have been advised by counsel that it would be appropriate to subtract them, which I will do when I submit updated damages with my rebuttal merits report. However, as noted above, the inclusion of these rebates do not alter my methodology or my conclusions relating to Class-wide impact; it simply changes the quantum of damages.

***Class Locations***

42. I have been asked by counsel to identify the states in which Class members are located. Attachment B is a list of all Class member locations as appearing in the AstraZeneca transaction sales data.

A handwritten signature in cursive script, reading "Raymond S. Hartman".

Raymond S. Hartman, Ph.D.

September 16, 2013

**Attachment A**

## **Attachment A: Materials Cited**

### **Bates Documents**

DRLMDL 179342-348

NEX-RBX 3505840-850

NEX-RBX 3514340-2

NEX-RBX 3514366

RAN-ESM 0134201-220

RAN-ESM 0194086-105

RAN-ESM 0462697-725

Teva-ESO-065243

### **Expert Reports, Depositions and Materials**

Declaration of Raymond S. Hartman in Support of the Certification of the Class of Direct Purchasers of Nexium, July 26, 2013.

Deposition of John Johnson, September 13, 2013.

Dr. Leffler's backup materials.

Expert Report of Dr. John H. Johnson, IV on Direct Purchaser Class Certification, September 11, 2013.

Report of Raymond S. Hartman on Market Definition, August 23, 2013.

Report of Raymond S. Hartman, Calculation of Damages for the Class of Direct Purchasers of Nexium, August 23, 2013.

Supplemental Declaration of Raymond S. Hartman in Support of the Certification of the Class of Direct Purchasers of Nexium, August 15, 2013.

### **Other Documents**

Caves, R., M. Whinston, and M. Hurwitz, "Patent Expiration, Entry, and Competition in the U.S. Pharmaceutical Industry," *Brookings Papers: Microeconomics*, 1991, pp. 1-48.

Congressional Budget Office, "How Increased Competition From Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry," Washington D.C, July 1998.

Federal Trade Commission, Generic Drug Entry Prior to Patent Expiration: An FTC Study, July 2002.

Federal Trade Commission, Pay-for-Delay: How Drug Company Pay-Offs Cost Consumers Billions, An FTC Staff Study, January 2010.

Frank, R. and D. Salkever, "Generic Entry and the Pricing of Pharmaceuticals," *Journal of Economics and Management Strategy*, 6(1), 1997, pp. 75-90.

General Accountability Office, Comparison of DOD and VA Direct Purchase Prices, April 2013.

Grabowski, H. and J. Vernon, "Brand Loyalty, Entry, and Price Competition in Pharmaceuticals after the 1984 Drug Act," *Journal of Law and Economics*, 35(2), 1992, pp. 331-350.

July 15, 2013 letter from T. Sobol.

Reiffen, D. and M. Ward, "Generic Drug Industry Dynamics," *Review of Economics and Statistics*, 87(1), 2005, pp. 37-49.

Saha, A., H. Grabowski, H. Birnbaum, P. Greenberg, and O. Bizan, "Generic Competition in the US Pharmaceutical Industry," *International Journal of the Economics of Business*, 13(1), 2006, pp. 15-38.

Schondelmeyer, S.W. and M.V. Wrobel, "Medicaid and Medicare Drug Pricing: Strategy to Determine Market Prices, Final Report," Abt Associates Inc., Prepared for Centers for Medicare and Medicaid Services, 2004.

September 6, 2013 letter from D. Sorensen.

Sorensen, A., "Equilibrium Price Dispersion in Retail Markets for Prescription Drugs," *Journal of Political Economy*, 108(4), pp. 833-850, August 2000.

Suh, D., W. Manning, S. Schondelmeyer, and R. Hadsall, "Effect of Multiple-Source Entry on Price Competition After Patent Expiration in the Pharmaceutical Industry," *Health Services Research*, 35(2), 2000, pp. 529-547.

**Attachment B**

**Attachment B: List of Class Member State Locations**

#	Parent Name	State
1	AMERISOURCEBERGEN CORP	AL
		AZ
		CA
		CO
		FL
		GA
		HI
		IL
		KY
		MA
		MI
		MN
		MO
		NC
		NJ
		NY
		OH
		PA
		PR
		TX
		UT
		VA
		WA
2	BURLINGTON DRUG CO INC	VT
3	CAPITAL WHOLESALE DRUG CO	OH

**Attachment B: List of Class Member State Locations**

#	Parent Name	State
4	CARDINAL HEALTH INC	AZ
		CA
		CO
		FL
		GA
		IL
		MA
		MO
		MS
		NC
		NJ
		NY
		OH
		PR
		TN
		TX
		UT
		WA
		WI
		WV
5	CESAR CASTILLO INC	PR
6	DAKOTA DRUG INC	MN
		ND
7	DISCOUNT DRUG MART	OH
8	DMS PHARMACEUTICAL GROUP INC	IL
9	DROGUERIA BETANCES INC	PR
10	DROGUERIA CTRL INC/CTRO	PR
11	DROGUERIA DE LA VILLA INC	PR

**Attachment B: List of Class Member State Locations**

#	Parent Name	State
12	EXPRESS SCRIPTS	IN NJ NV OH
13	FRANK W KERR CO	MI
14	GOOD SAMARITAN HOSP & HLTH	OH
15	H D SMITH WHLSLE DRUG CO INC	CA FL IL KY NH NJ TX
16	HARVARD DRUG GROUP LLC	MI
17	J M SMITH CORP	AR GA SC
18	KING DRUG CO OF FLORENCE	SC



**Attachment B: List of Class Member State Locations**

<b>#</b>	<b>Parent Name</b>	<b>State</b>
19	MCKESSON CORP	AK
		AL
		AZ
		CA
		CO
		CT
		FL
		GA
		HI
		IL
		MA
		MD
		MI
		MN
		MO
		MS
		NE
		NJ
		NY
		OH
		OK
		OR
		PA
		SD
		TN
		TX
		UT
		VA
		WA
		WI
20	MIAMI LUKEN INC	OH
21	MORRIS & DICKSON CO LTD INC	LA
22	NORTH CAROLINA MUTUAL WHSLE	NC

**Attachment B: List of Class Member State Locations**

<b>#</b>	<b>Parent Name</b>	<b>State</b>
23	PHARMACY BUYING ASSOCIATES	MO
24	PRESCRIPTION SUPPLY INC	OH
25	R & S NORTHEAST	PA
26	REBEL DISTRIBUTORS CORP	CA
27	ROCHESTER DRUG COOPERATIVE INC	NY PA
28	VALUE DRUG CO INC	PA
29	WHOLESALERS GROUP INC	PR

Source: AstraZeneca direct sales and customer detail data.

## Exhibit 4

9/4/2013

In Re: Nexium Antitrust Litigation

Raymond S. Hartman

Page 1

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

- - - - - X

IN RE: NEXIUM (ESOMEPRAZOLE ) MDL No. 2409

MAGNESIUM) ANTITRUST LITIGATION )

) Case No.

This document relates to: ) 1:12-MD-02409-WGY

All Direct Purchaser Class Actions )

- - - - - X

VIDEOTAPED DEPOSITION OF RAYMOND S. HARTMAN, Ph.D.

Wednesday, September 4, 2013, 9:34 a.m.

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

One Financial Center

Boston, Massachusetts 02111

Reporter: Kimberly A. Smith, CRR, RDR

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DIGITAL EVIDENCE GROUP

1726 M Street NW, Suite 1010

Washington, DC 20036

(202) 232-0646

9/4/2013

In Re: Nexium Antitrust Litigation

Raymond S. Hartman

<p>1 there were no direct purchases of Nexium by American</p> <p>2 Sales or Meijer?</p> <p>3 A. That would be the case.</p> <p>4 Q. What understanding, if any, do you have</p> <p>5 about the status of American Sales and Meijer as</p> <p>6 plaintiffs in this case?</p> <p>7 A. Well, there's a -- there's a definition of</p> <p>8 class. And it's my understanding that in order to</p> <p>9 be in the class, you have to meet the definition of</p> <p>10 the class.</p> <p>11 Q. And so in your understanding of the class,</p> <p>12 is that the class includes entities that purchase</p> <p>13 directly from AstraZeneca -- purchase Nexium directly</p> <p>14 from AstraZeneca, correct?</p> <p>15 A. That's correct.</p> <p>16 Q. And American Sales and Meijer did not</p> <p>17 purchase directly from AstraZeneca, correct?</p> <p>18 A. According to the data that my staff has</p> <p>19 compiled, that seems to be the case.</p> <p>20 Q. So American Sales and Meijer are not</p> <p>21 members of those class, correct?</p> <p>22 MR. SOBOL: Objection.</p> <p style="text-align: right;">Page 70</p>	<p>1 represented to you is their parent company, this</p> <p>2 list would number 1 to 29; is that right?</p> <p>3 A. Given the taxonomy and the way they've been</p> <p>4 presented here, they would be -- that's correct.</p> <p>5 Q. Now, D.2 is a -- the "Direct customer list</p> <p>6 under Scenario 2," correct?</p> <p>7 A. Correct.</p> <p>8 Q. And so this shows that under Scenario 2,</p> <p>9 there were 26 Direct Purchasers of Nexium, correct?</p> <p>10 A. That's correct.</p> <p>11 Q. And so in here if we were to move J.M. Smith</p> <p>12 Drug and Valley Wholesale under their parent</p> <p>13 companies, this number would go from 1 to 24,</p> <p>14 correct?</p> <p>15 A. Same -- Yes. With the same caveat as the</p> <p>16 answer to D.1, that's correct.</p> <p>17 Q. And the same Pavlovian response regarding</p> <p>18 I'm not asking you about legal.</p> <p>19 Now, do I understand it correctly that</p> <p>20 the reason Scenario 1 has more class members than</p> <p>21 Scenario 2 is because the but-for generic entry date</p> <p>22 is earlier under Scenario 1?</p> <p style="text-align: right;">Page 72</p>
<p>1 THE WITNESS: According to my reading of</p> <p>2 the definition of the class, that -- that is correct.</p> <p>3 To the extent that there are legal issues involved,</p> <p>4 I -- that's something I can't render an opinion</p> <p>5 about. But they do not -- they do not fit into the</p> <p>6 definition of the class in paragraph 10 of my</p> <p>7 declaration if they do not appear as having</p> <p>8 purchased Nexium in -- in Attachment D.1.</p> <p>9 BY MR. LAZEROW:</p> <p>10 Q. And I will be like Pavlov. Every time you</p> <p>11 say "legal issues," I will tell you I am not asking</p> <p>12 you for sure about legal issues unless I specifically</p> <p>13 say I want to know your legal opinion on something.</p> <p>14 Is that fair?</p> <p>15 A. It's fair. And like Pavlov's dog, I will --</p> <p>16 every time I feel like there could -- there may be</p> <p>17 some legal interpretation lurking in a question, I</p> <p>18 want to distinguish what I can -- what I can say as</p> <p>19 a matter of economics and fact and evidence and I</p> <p>20 can't say as a matter of law.</p> <p>21 Q. So under Scenario 1, if we were to indent</p> <p>22 those two entities and put them under what I've</p> <p style="text-align: right;">Page 71</p>	<p>1 A. That's correct.</p> <p>2 Q. And as I understand Scenario 1, the but-for</p> <p>3 entry date that you were provided was April 14, 2008,</p> <p>4 correct?</p> <p>5 A. That's correct.</p> <p>6 Q. Now, you made an adjustment for statute of</p> <p>7 limitations, right?</p> <p>8 A. That's correct.</p> <p>9 Q. Can you explain that. That adjustment.</p> <p>10 A. Well, the -- I can explain it only in a</p> <p>11 general -- in a general way, in that in some -- some</p> <p>12 filings in this matter were sufficiently late that</p> <p>13 the statute of limitation expired on all transactions</p> <p>14 prior to August 27 of 2008. Even though injury and</p> <p>15 damages occurred to the group of Direct Purchasers</p> <p>16 prior to that date, they are not allowed to recover</p> <p>17 those damages.</p> <p>18 Q. And under Scenario 2, the date that you</p> <p>19 were provided for the but-for generic entry date was</p> <p>20 January 1, 2012; is that correct?</p> <p>21 A. I think that's right, but I will just check</p> <p>22 to make sure so I don't mess up the record. Yes,</p> <p style="text-align: right;">Page 73</p>

Pages 70 to 73

## Exhibit 5

1 UNITED STATES DISTRICT COURT  
2 FOR THE DISTRICT OF MASSACHUSETTS

3 MDL NO 2409

4 Master File No. 12-md-2409

5 In Re: NEXIUM (ESOMEPRAZOLE)  
6 ANTITRUST LITIGATION

7 -----  
8 This Document Related To:  
9 All Actions

10 - - -  
11 September 13, 2013

12 CONFIDENTIAL - ATTORNEYS' EYES ONLY

13 - - -  
14 Videotaped deposition DR. JOHN H.  
15 JOHNSON, IV, taken at the Covington &  
16 Burling, 1201 Pennsylvania Avenue, N.W.,  
17 Washington, D.C. 20004, beginning at  
18 a.m., before LINDA ROSSI RIOS, RPR, CCR and  
19 Notary Public.  
20  
21  
22  
23  
24  
25

1 DR. JOHNSON - CONFIDENTIAL - ATTORNEYS' EYES ONLY  
2 of my assignment here, sure.

3 Q. I'm not talking just about your  
4 assignment. I'm just drawing on everything  
5 that's in your brain about the pharmaceutical  
6 industry and markets and brand or generic  
7 drugs. Not just limited to your assignment,  
8 not just limited to your report, anything  
9 else that you're aware of, is it your  
10 testimony you're saying you can't address  
11 that question?

12 A. All right. As someone who  
13 studies customer behavior quite frequently,  
14 the part that I'm uncomfortable with, again,  
15 you used a phrase all or virtually all which  
16 I understand has some legal meaning. Without  
17 studying that question, I'm uncomfortable  
18 making the representation in the way you  
19 have.

20 Q. Have you ever heard of a  
21 pharmacy in the United States that only buys  
22 brand drugs?

23 A. No.

24 Q. Have you personally gone into a  
25 pharmacy in your life to buy drugs for



1 DR. JOHNSON - CONFIDENTIAL - ATTORNEYS' EYES ONLY

2 overcharge is above zero, that's an antitrust

3 injury, that's all I'm trying to ask?

4 MR. LAZEROW: Objection.

5 BY MR. SORENSEN:

6 Q. Is there some quantity aspect

7 that's a requirement as far as you

8 understand, it has to be above a million

9 dollars or above a thousand dollars?

10 A. Oh, in that context, no.

11 Again, to be clear, my understanding of

12 antitrust injury is binary. You're harmed or

13 you're not harmed.

14 Q. So above zero, you're harmed.

15 Correct?

16 MR. LAZEROW: Objection.

17 BY MR. SORENSEN:

18 Q. That's what binary means?

19 A. That's generally my

20 understanding.

21 Q. Okay. And you have this

22 assignment that's discussed in paragraph 6,

23 who gave you that assignment?

24 A. That was an assignment given to

25 me by counsel.

1 DR. JOHNSON - CONFIDENTIAL - ATTORNEYS' EYES ONLY

2 Now, Dr. Hartman calculates,  
3 and I'll refer to his report you have seen.

4 A. Okay.

5 Q. Do you recall Dr. Hartman  
6 presents calculations of but-for generic  
7 prices?

8 A. I do.

9 Q. Those prices, DMS is the only  
10 direct purchaser that you've identified whose  
11 net average price for Nexium is below the  
12 but-for generic price -- prices that  
13 Dr. Hartman -- start again.

14 Is DMS the only direct  
15 purchaser that you've identified whose net  
16 average price on Nexium is below any of or  
17 all of the but-for generic prices that  
18 Dr. Hartman has calculated, or is there any  
19 other direct purchaser for which you claim  
20 that to be true of? Do you follow my  
21 question?

22 A. I think I do. I'll try to be  
23 clear.

24 Q. I'll make it concrete. So you  
25 have a number of \$0.43 for DMS?

1 DR. JOHNSON - CONFIDENTIAL - ATTORNEYS' EYES ONLY

2 A. Yes.

3 Q. Dr. Hartman presents but-for  
4 generic prices, here we go, that go down to  
5 \$1.05, start at 2.57 and go down to \$1.05.

6 A. Okay.

7 Q. And those are above \$0.43, I  
8 get that.

9 A. Yes.

10 Q. But is there any other direct  
11 purchaser for which that is also true, that  
12 is their Nexium price is below all of the  
13 but-for generic prices?

14 A. So in the context of your  
15 question, which I'm not sure is the right  
16 comparison, but in the context of your  
17 question, if you're asking me is an overall  
18 average as is shown in Exhibit 6 below the --  
19 mathematically below the 2.46 or 2.13 or  
20 whatever we just said, no. Of course that  
21 doesn't account for the way the analysis  
22 actually has to be done. And I surely don't  
23 want to imply that I in any way believe that  
24 but-for price is an appropriate calculation  
25 for the purposes of determining antitrust

1 DR. JOHNSON - CONFIDENTIAL - ATTORNEYS' EYES ONLY  
2 injury here.

3 Q. Now, I understand you don't  
4 agree with the prices. I get that. I'm just  
5 trying to make sure I understand what you  
6 specifically have identified in your report  
7 versus what you haven't. And you mentioned  
8 DMS repeatedly and it's below price. I'm  
9 just wondering if there's any other drug  
10 purchaser that you say also has a Nexium  
11 price that is below any of the but-for  
12 generic prices that Dr. Hartman has  
13 calculated. That's all I'm trying to  
14 understand.

15 A. So, again, mathematically, if  
16 you're saying taking Dr. Hartman and all the  
17 premises that I've accepted as true, no  
18 generic bypass, no indirect rebates count,  
19 his methodology can actually be relied upon  
20 for an average price, and that but-for  
21 average price is meaningful, no, the overall  
22 average across the entire period does not  
23 fall below his lowest price for anyone except  
24 DMS.

25 Q. Okay. Do you know what the

1 DR. JOHNSON - CONFIDENTIAL - ATTORNEYS' EYES ONLY  
2 question.

3 Take a look at paragraph 23 of  
4 your report, page 22. Are you there, sir?

5 A. Yes.

6 Q. You discussed bullets that go  
7 onto page 23, some of the members of the  
8 proposed direct purchaser class.

9 Do you see that?

10 A. Yes.

11 Q. Now, for all of them except  
12 DMS, which I'll get to, you list, among the  
13 customers of direct purchasers, pharmacies.  
14 Correct?

15 A. Yes.

16 Q. Are you aware of any proposed  
17 member of the direct purchaser class other  
18 than DMS that does not sell to pharmacies, at  
19 least in part?

20 A. I'm not sure about Good  
21 Samaritan Hospital.

22 Q. Okay. Any others?

23 A. Not that I -- not as I sit here  
24 today, no.

25 Q. Turn to page 27, please, of

1 DR. JOHNSON - CONFIDENTIAL - ATTORNEYS' EYES ONLY  
2 asked you before about your understanding of  
3 the meaning of antitrust injury. Do you  
4 recall that?

5 A. Yes.

6 Q. That's what I'm asking about  
7 right now.

8 A. Okay.

9 Q. Antitrust injury as applied to  
10 a generic alleged -- alleged generic  
11 suppression case. All right?

12 A. Okay.

13 Q. As applied to a case in which  
14 the allegation is alleged wrongful  
15 suppression of delay of generic competition,  
16 is it your understanding that antitrust  
17 injury by a direct purchaser can be shown as  
18 long as it is shown or can be shown that the  
19 direct purchaser of the brand would have  
20 bought some amount of the generic at a price,  
21 at some price below the price at which they  
22 bought the brand?

23 MR. LAZEROW: Objection to form.

24 BY MR. SORENSEN:

25 Q. That's my question.

1 DR. JOHNSON - CONFIDENTIAL - ATTORNEYS' EYES ONLY

2 A. So if you're asking me for any  
3 individual customer or direct purchaser, if  
4 one tries to determine whether they were  
5 injured, if it were the case that one did the  
6 individual inquiry and found the actual price  
7 paid was greater than the but-for price, and  
8 there was some type of switching, there would  
9 have been switching from the actual -- from  
10 the branded to the generic, and that includes  
11 accounting for all of the rebates and  
12 discounts and all of the other issues, then  
13 my understanding is yes.

14 Q. As you understand the members  
15 of the proposed direct purchaser class, they  
16 are all resellers of pharmaceuticals.  
17 Correct? They're not end users, they're not  
18 patients, they are not -- the drugs don't  
19 stop there, they get resold?

20 A. I think everyone but Good  
21 Samaritan Hospital.

22 Q. And Good Samaritan Hospital, do  
23 you know whether it maintains a pharmacy?

24 A. I don't know.

25 Q. Are you familiar with the fact

## Exhibit 6





HAGENS BERMAN

Thomas M. Sobol  
**HAGENS BERMAN SOBOL SHAPIRO LLP**  
55 CAMBRIDGE PARKWAY, SUITE 301  
CAMBRIDGE, MA 02142  
www.hbsslaw.com  
Direct (617) 482-3700  
tom@hbsslaw.com

July 15, 2013

**BY EMAIL**

Andrew D. Lazerow, Esq.  
**COVINGTON & BURLING LLP**  
1201 Pennsylvania Avenue, NW  
Washington, DC 20004  
Email: alazerow@cov.com

Re: *In re Nexium (Esomeprazole) Antitrust Litigation*  
Master File No. 12-md-02409-WGY

Dear Andrew:

We have reviewed the sales and transactional data that AstraZeneca has thus far produced in this case, and we have some follow-up questions about the data so that we may confirm our understanding of portions of the data and obtain sufficient information to understand other of the data. I have enclosed our questions with this letter.

In the interest of conserving everyone's time, and as the parties have been able to work cooperatively through informal follow-up on many matters, I am writing to request that you route the attached questions to the appropriate person in AstraZeneca's organization for the answers. Please give me a call and I will gladly clarify questions and work with you.

Thank you for the assistance.

Sincerely,

**/s/Thomas M. Sobol**

Thomas M. Sobol  
HAGENS BERMAN SOBOL SHAPIRO LLP

cc: David S. Nalven  
Donna M. Evans  
Bruce E. Gerstein  
David Sorensen  
Peter Kohn

**AstraZeneca Data Questions**

**July 15, 2013**

**A. AZ-NX-MDL-00968558.txt (Customer Information)**

1. Please confirm that the “company ID” field can be merged with the other data files mentioned in these questions. For each of the other data files, please identify the fields that can be used to merge with the “company ID” field in the customer information file.
2. Please provide a full and complete description of each of the following codes that appear in the “customer category code” field:  
  
BP, CD, CE, CL, CO, CR, DC, DD, DO, FS, HC, HN, HO, HT, HV, IS, LT, MP, MT, NH, NP, OE, OG, OW, RI, RW, SC, SH, SO, SP, SU, SV, UG, VA, WH, WR and Z4.
3. Please confirm that this file contains customer information for all customers or entities that appear in all of the data files discussed below. If not, please explain where customer information can be obtained for those files.
4. What does the “status” field signify? What does it mean when it is equal to “A” or “I”?
5. What does the “address type code” field signify? What does it mean when it is equal to “CBK” or “TRADE”?

**B. AZ-NX-MDL-00968559.txt (Direct Sales Data)**

1. Please provide a full and complete description of each of the following codes that appear in the “SAP invoice type” field:  
  
F2, G2, L2, RE, S1, S2, Z1, Z2, ZIMA, ZIMD, ZRE and ZREG.
2. For each of the invoice types mentioned above, please confirm whether the dollar amounts for such transactions should be included in the calculation of net sales.
3. For each of the invoice types mentioned above, please confirm whether the units for such transactions should be included in the calculation of total units sold.
4. If one of those invoice types refers to returns, please explain how units and dollar amounts are recorded in such transactions. Are the units in terms of bottles or pills? If a partial bottle is returned, how is the quantity reflected in the data?

5. What is the “sales master ID” field? How is it used?
6. What is the “doc number” field? How is it used?
7. What is the “sales indicator” field? What does it mean when it is equal to “A” or “D”?
8. What is the “invoice type code” field? What does it mean when it is equal to “BO”, “IN” or “RC”?
9. What is the “SAP order type code” field? Please provide a full and complete description of each of the following codes found in this field:  
  
ZBMP, ZCAA, ZCR, ZDAA, ZDR, ZIMC, ZIMD, ZORD, ZPRT and ZRTG.
10. What is the “SAP order reason code” field? Please provide a full and complete description of each of the following codes found in this field:  
  
R01, R02, R03, R05, R07, R13, R14, R15, R16, R17, R23, R24, R25, R26, R28, R31, R39, Z02, Z03, Z05, Z06, Z07, Z08, Z15, Z16, Z28, Z29, Z36 and Z38.
11. Does the “company ID” field refer to the bill-to entity? If not, please explain.
12. Please provide a full and complete description of each of the following codes found in the “customer type code” field:  
  
DUP, HOSP, MTF, PMC, U and WHSLR.
13. Some descriptions in the “product name” field include the phrase “(GOV’T Only)”. What does that phrase mean? Where certain of these products are not sold to governmental entities, please indicate the reason for each?
14. Please confirm that the total dollar extended amount for a given transaction is derived by multiplying the “qty pkgs invoiced” field by the “pkg price” field. Are there any exceptions to this? If there are exceptions, please explain.
15. What does it mean when the “qty pkgs invoiced” field is a fractional amount, i.e., not a whole number?
16. What is the “adjustment amount” field? How is it used?
17. There are 16,738 records where the “qty pkgs invoiced” field is negative and the “pkg price” field is zero. What kind of transactions are these? Why is the “pkg price” field zero?

18. There are 344 records where the “qty pkgs invoiced” field is positive, the “pkg price” field is blank and the “adjustment amount” field is positive. What kind of transactions are these? Please explain what the “adjustment amount” means and represents in this context?
19. There are 45 records where the “qty pkgs invoiced” field is positive and the “pkg price” field is zero. What kind of transactions are these? Why is the “pkg price” field zero?
20. There are 122 records where the “qty pkgs invoiced” field is zero, the “pkg price” field is blank and the “adjustment amount” field is greater than or equal to zero. What kind of transactions are these? Please explain what the “adjustment amount” means in this context?
21. On May 19, 2008 (according to the “invoice date”), there are 10 records with a negative “qty pkgs invoiced” and with a “SAP order reason code” of “Z29”. These records are characterized by a large magnitude of negative units and a unit price of less than a penny. What do these records represent?

**C. AZ-NX-MDL-00968560.txt (Chargeback Data)**

1. Is there any way to link the chargeback data transactions in this file with the original invoices appearing in the direct sales data? If so, how?
2. What is the “sales master ID” field? How is it used?
3. What is the “contract ID” field? How is it used?
4. What type of customer does the “ship to cust ID” field refer to? The wholesaler? The wholesaler’s customer? Some other type of customer?
5. What is the “doc number” field? How is it used?
6. What is the “invoice date”? Is that the date of invoice from the wholesaler to its customer?
7. Please confirm that the “wholesaler company ID” field can be matched with the “company ID” field in the AZ-NX-MDL-00968558.txt data.
8. What is “pkg price”? Is that the wholesale price, or WAC?
9. Please confirm that the “chargeback amount” field indicates the final, total chargeback amount that was paid in each transaction. If not, please explain.
10. What is the “adjustment amount”?

11. Please explain how one can determine the contract price using the “qty pkgs invoiced,” “pkg price” and “chargeback amount” fields.
12. Please confirm that the “company type code,” “company name” and “customer category code” refer to the wholesaler’s customer.
13. Please provide a full and complete description of each of the following codes that appear in the “company type code” field:  
  
AF, AHP, ASC, ASSOC, BG, BIO MED, BOP, BOP REF, C INF, CDP, CF, CFP, CG, CH, CLIN, CONFRMPHAR, CP, DEPT, DUP, EBC, EMP, FACPRACT, FAO, FP, GMC, GOVT, GPO, GRPR, H, HDEPT, HMO, HMOCLIN, HMOHOSP, HMOP, HOC, HOSP, HOSPDEPT, HP, HS, HWARE, IHCS, IHHC, IHS, IND, INF, IP, IPA, LTC, MCO, MED, MEDSCHLDIV, MHS, MISC, MOP, MTF, NH, NHCG, NHP, NHPR, NM, NPA, NWHS LR, OC, OPHS, PAA, PBMLTC, PC, PH, PHO, PHS, PMC, PPO, PR INF, PTM, RESFAC, RF, SGRC, U, USS, VACO, VAD, VISIT, WARE and WHSLR.
14. Please confirm that the codes appearing in the “customer category code” are the same as the “customer category code” field in the AZ-NX-MDL-00968558.txt data.
15. Please provide a full and complete description of each of the following codes that appear in the “contract category code” field:  
  
C, CCA, CCM, UA and UM.
16. What does the “status” field signify? What does it mean when it is equal to “A” or “I”?
17. What does the “dist channel code” field signify? What does it mean when it is equal to “B” or “P”?

**D. AZ-NX-MDL-00968561.txt (Rebate Data)**

1. What is the “rebate claim header ID” field? How is it used?
2. What is the “contract number” field? Can this be merged with any other field in the data provided? If so, how?
3. What is the “plan ID” field? Can this be merged with any other field in the data provided? If so, how?
4. What is the difference between the “company ID”, “company ID 1” and “company ID 2” fields? Can each of these fields be merged with the “company

ID” field in the AZ-NX-MDL-00968558.txt data? If not, is there another customer data file that contains customer information for these customers?

5. Please provide a full and complete description of each of the following codes that appear in the “customer category code” field:

BG, FG, IP, MA, MS, PB, SM and VA.

6. Please provide a full and complete description of each of the following codes that appear in the “customer category code 1” field:

BG, CR, EH, EM, FG, HC, HI, HM, IN, IP, LT, MA, MD, MP, MS, NH, NP, PB, RI, RM, SM, SO and VA.

7. What is the difference between the “customer category code” and “customer category code 1” fields?
8. What do “claim period start date” and “claim period end date” refer to?
9. What does “filled period start date” refer to?
10. What is “discrete quantity paid”? Is this in terms of number of capsules?
11. What is “dollar amount paid”?
12. What is “product basis price”?
13. What is “gross sales amount”? How is it calculated?

**E. AZ-NX-MDL-00968562.txt (Admin Fee Data)**

1. Please describe what kinds of fees are included in this data file.
2. What sorts of customers receive these payments, and why?
3. How can the customer category code of the customers be determined in these data?
4. What is the “fee ID” and how is it used?
5. What is the “contract ID”? How is it used? Can it be merged with any other data file that has been produced? If so, how? If not, are there data elsewhere that provide further information regarding the “contract ID”?
6. What is the “contract org compass ID” field? Can it be merged with any other data file that has been produced? If so, how? If not, are there data elsewhere that provide further information regarding the “contract org compass ID”?

7. Note that the “contract org compass ID” field does not appear to match with the company IDs appearing in the AZ-NX-MDL-00968558.txt file. Why? Does this suggest missing customer information data?
8. What is the “member compass ID” field? Can it be merged with any other data file that has been produced? If so, how? If not, are there data elsewhere that provide further information regarding the “member compass ID”?
9. What is the “basis amount” field? What does it represent?
10. How is the “fee paid amount” calculated?
11. What is the “sales master ID” field? How is it used?
12. What do the “fee period start date” and “fee period end date” refer to?

**F. AZ-NX-MDL-00968563.txt (Contract Information)**

1. What do the data in this file refer to? What kinds of contracts does this file refer to?
2. Can the information in this file be linked or merged with any other file in this production? If so, how?
3. What is the “contract number” field? Can it be used to merge with any other data file in this production? If so, how?
4. What is the “basis allocated amount” field? Does it reflect a payment that is made? How is it calculated?
5. If the “basis allocated amount” field indicates a payment that is made, is this payment also reflected in any other data file in this production, such as AZ-NX-MDL-00968561.txt or AZ-NX-MDL-00968562.txt?
6. The “contract type code” indicates “REBATE.” What kind of rebates are these? Are these rebates also reflected in the AZ-NX-MDL-00968561.txt file?

## Exhibit 7



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**From:** Monday, Kathy  
**Sent:** Wednesday, December 5, 2007 06:37:36 PM  
**To:** Barker, Richard S  
**CC:** Lorenc, Eleanor  
**Subject:** RE: Genesis

Great  
this helps

I didn't get much of a debrief from Ken - only that costs were discussed (why I asked) and that's why Ken asked who was authorizing. David Smith still voiced concerns on having SET be aware of this but not out issue.

I will let you know more when I know

WRT authorizations - yes - lets use a similar approach as we did with mockingbird for investments - even if it wont be paid out the same way.

thanks

-----Original Message-----

From: Barker, Richard S  
Sent: Wednesday, December 05, 2007 2:01 PM  
To: Monday, Kathy  
Cc: Lorenc, Eleanor  
Subject: RE: Genesis

Kathy,

The cost estimates to date are:

Capsules - \$400k for 110MM capsules - capsules ordered (cost estimate provided by Global Purchasing)

Formulation - \$5MM for Sweden to formulate 110MM capsules - timing for Sweden to start currently is  
**Redacted - Priv** (cost estimate based on current COGs and provided by Sweden Ops)

Packing - \$10.6MM for Merck to package 110MM capsules based on 2007 standard costs and current Branded NDC volume splits (\$10.6MM includes the transferred cost of capsules which Merck will purchase directly from Sweden as well as the costs for all packaging components (again based on 2007 costs) per current business practices). We approached the estimate in this manner because we weren't

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able to discuss costs with Merck and we had to give the US Business an order of magnitude idea of the investment required to prepare for an AG launch. The actual costs for packing will most likely change as we nail down the final volume forecast and actual NDC splits with them. For our planning purposes, we have been using [Redact] for Merck to start packing, however, Liz seems to think it's closer to [Redact]. Actual timing for Merck to order components and start packaging should be nailed down next week at our F2F.

As far as authorizations, to date we have only received authorization to purchase capsules.

We agreed with John McCarthy and Marion McCourt, as part of the project planning process, to identify specific milestones where investment is required so that the US Business could review the current landscape and provide approval (or denial) to proceed. As you know we've done that for capsules. The next big milestone is Sweden Ops formulation. John and Marion are both aware of the timing which was re-emphasized to them yesterday at our Core Team Meeting. So what I'm anticipating is that Marion will have a similar dialog with US Business leaders to gain approval to proceed. I'll follow up with John/Marion today just to be sure. For now, Sweden is under instruction not to proceed with formulation until they are given specific approval to do so.

Brian D. did share with me a letter to Ken outlining costs/risk he pulled together for Mockingbird for authorization to proceed. If I need to do similar for this project let me know.

I haven't spoken to Karin - did something come out of OMT today?

Rick

-----Original Message-----

From: Monday, Kathy  
Sent: Wednesday, December 05, 2007 11:56 AM  
To: Barker, Richard S  
Cc: Lorenc, Eleanor  
Subject: Genesis

Rick

Can you provide me with ALL costs that are associate with purchase of capsules, formulation, packing etc  
Have any risk authorizations been issued ?

Kathy Monday  
VP, Customer & Technical Operations  
302-885-1133-Office/610-203-3106-cell/302-886-1236-fax  
Kathy.Monday@astrazeneca.com

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NEX-RBX 3514342

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## Exhibit 8

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF MARYLAND

IN RE: TITANIUM DIOXIDE ANTITRUST  
LITIGATION

\* \* \* \* \* CIVIL ACTION No.: RDB-10-0318

THIS DOCUMENT RELATES TO:  
ALL ACTIONS

\* \* \* \* \*

**MEMORANDUM OPINION**

This case concerns an alleged price-fixing conspiracy in the market for titanium dioxide. Plaintiffs Haley Paint Company and Isaac Industries, Inc., and Intervening Plaintiff East Coast Colorants, LLC d/b/a Breen Color Concentrates (collectively, “Plaintiffs”) claim that Defendants E.I. du Pont de Nemours & Co. (“DuPont”), Huntsman International LLC (“Huntsman”), Kronos Worldwide Inc. (“Kronos”), and Millennium Inorganic Chemicals, Inc. (“Millennium”) (collectively, “Defendants”) engaged in an unlawful conspiracy in violation of Section 1 of the Sherman Act, 15 U.S.C. § 1, to fix, raise, or maintain the price of titanium dioxide in the United States.<sup>1</sup> Plaintiffs allege that as a consequence of the

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<sup>1</sup> In addition to the named Defendants, Plaintiffs have named several co-conspirators, including, *inter alia*, Tronox Inc. (“Tronox”) and The National Titanium Dioxide Company Ltd. (d/b/a “Cristal”). Tronox filed for Chapter 11 bankruptcy protection in January 2009, and is therefore precluded from being named as a defendant. *See* 11 U.S.C. § 362(a). Plaintiffs originally sought to include Cristal as a named defendant in this case, but this Court dismissed Cristal for want of jurisdiction on March 31, 2011. *See* Mem. Op. and Order, ECF Nos. 101 & 102. Subsequently, Plaintiffs have sought formal reconsideration of that decision on two occasions. On April 3, 2012, this Court denied the Plaintiffs first motion for reconsideration by Memorandum Order (ECF No. 268). At the August 13, 2012 Class Certification hearing, this Court again denied the Plaintiffs’ request to add Cristal as a defendant. *See* Order, ECF No. 332.

unlawful conspiracy, Defendants were successful in charging artificially inflated prices for titanium dioxide products—thereby injuring all Plaintiffs.

Presently pending is Plaintiffs’ Motion for Class Certification and for Appointment of Class Counsel (ECF No. 246). This Court has reviewed the record, as well as the pleadings and exhibits, and conducted a full-day class certification hearing on August 13, 2012. For the reasons that follow, Plaintiffs’ Motion for Class Certification will be GRANTED.

## **BACKGROUND**

### **I. THE PLAINTIFFS’ FACTUAL ALLEGATIONS**

The allegations contained in the Plaintiffs’ Consolidated Amended Complaint (ECF No. 51) were fully set forth in this Court’s previous Memorandum Opinion entered on March 29, 2011. *See Haley Paint Co. v. E.I. du Pont de Nemours & Co.*, 804 F. Supp. 2d 419 (D. Md. 2011) (denying Defendants’ motion to dismiss complaint). That background is repeated here, in part, so as to provide context for the pending motion for class certification.

Defendants are the leading suppliers of titanium dioxide (“TiO<sub>2</sub>”) in the world, and control approximately 70 percent of the global production capacity. Consol. Am. Compl. (“CAC”) ¶ 1. TiO<sub>2</sub>, a so-called “quality of life” product, is a dry chemical powder that is the “world’s most widely used pigment for providing whiteness, brightness, and opacity . . . to many products, particularly paints and other coatings.” *Id.* ¶ 33. TiO<sub>2</sub> has few competitive substitutes, and demand for it tends to be inelastic. *Id.* ¶ 35. Plaintiffs allege that, as a result of a declining market for TiO<sub>2</sub>, Defendants conspired to fix, raise, maintain, and stabilize the price of the product. *Id.* ¶ 2, 69. This conspiracy is alleged to have occurred between

February 1, 2003, through the present (hereinafter referred to as the “Class Period”).<sup>2</sup> *Id.* ¶

21. During the Class Period, TiO<sub>2</sub> prices increased, and Defendants earned billions of dollars in revenue. *Id.* ¶ 3, 1.

## **II. The Titanium Dioxide Market**

As previously mentioned, Defendants are the market leaders in the production of TiO<sub>2</sub>. The market is global in scope, with the majority of trade conducted internationally. *Id.* ¶ 49. The market for the chemical has high barriers to entry—it is estimated that a new plant would require \$450-500 million and three to five years to build. *Id.* ¶ 43. As a result, the industry is highly centralized. *Id.* ¶ 42-48. Beginning in the early 1990s, prices for TiO<sub>2</sub> began to decline for a variety of reasons, such as global overcapacity and customer consolidation. *Id.* ¶ 68. Prices increased in the late 1990s, but fell significantly in 2001. *Id.* Plaintiffs allege, that as a result of declining prices and declining demand, “Defendants were motivated to reach, and did reach, an agreement or understanding in or about early 2002 to increase prices and improve margins in the industry.” *Id.* ¶ 69.

### **A. Alleged Conspiracy to Fix Prices of Titanium Dioxide**

It is alleged that on January 24, 2002, a TiO<sub>2</sub> industry meeting took place in Finland. *Id.* ¶ 54. Shortly thereafter, and in spite of flat or declining demand for TiO<sub>2</sub>, Defendants and their co-conspirators announced price increases to be effective March 1, 2002. Further price increases were announced and implemented in the summer of 2002. *Id.* The following

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<sup>2</sup> Plaintiffs originally defined the Class Period as beginning in March of 2002. Plaintiffs have since modified the Class Period to begin on February 1, 2003 because “[t]he evidence shows that while the Cartel behavior began as early as 2002, it does not appear to have become fully effective until February 2003. [citation omitted] As a result, and to be conservative, Plaintiffs propose to delay the start of the Class period until February 1, 2003, despite the evidence of illegal antitrust activity before that date.” Pls.’ Class Mem. at 3 n.2, ECF No. 247.

year, a TiO<sub>2</sub> conference took place in Miami, Florida. That conference was attended by Defendants, and the former Vice President of Defendant Millennium specifically told attendees to expect further price increases. *Id.* ¶ 55. Numerous other meetings and conferences were held over the next several years, and those meetings neatly corresponded to TiO<sub>2</sub> price increases during the Class Period. *Id.* ¶¶ 52, 56-61. Plaintiffs allege that it was at these conferences where Defendants agreed and conspired to fix the price and supply and capacity of TiO<sub>2</sub>. *Id.* ¶ 62.

In addition to conferences and trade meetings, Plaintiffs also allege that the conspiracy was furthered through industry publications and through conversations with industry consultants, customers, and others. *Id.* ¶ 51. “After having reached an unlawful agreement or understanding . . . , Defendants used consultants, customers, and others as conduits to signal or confirm intended pricing and other actions to each other.” *Id.* These conversations and signals allowed Defendants to monitor the conspiracy and cut down on potential “cheating,” whereby one participant could undercut the others by reducing their prices. *Id.* Plaintiffs also allege that Defendants privately discussed industry conditions and TiO<sub>2</sub> pricing at dinner meetings before and after the various trade association and industry meetings. *Id.* ¶ 53. In short, Plaintiffs allege that Defendants had ample ability to conspire to fix the price and capacity of TiO<sub>2</sub>.

### **B. Titanium Dioxide Pricing**

According to the Plaintiffs, in the face of declining demand, reduced costs, and increased production capacity, *see* ¶¶ 54, 69, 71, 74, 81-82, 84, 102, the price of TiO<sub>2</sub> actually increased substantially during the Class Period. *Id.* ¶ 103. Plaintiffs allege that Defendant



DuPont, the titanium dioxide market leader, typically would announce a price increase which would be quickly followed by all other Defendants. *Id.* ¶¶ 67, 72-75, 77-78, 80, 82-101. According to the Plaintiffs, Defendants announced and implemented multiple and nearly simultaneous TiO<sub>2</sub> price increases in lock-step fashion. Of crucial importance to Plaintiffs case is their contention that these price increases were implemented in the midst of market conditions, such as declining demand, decreasing manufacturing costs, and excess production capacity, that Plaintiffs allege are completely incompatible with across the board price increases among the market leaders of a product.

Although the price increases were spaced out over five years, they increased in frequency in 2008. Plaintiffs allege that “over the course of approximately 14 weeks, from late May 2008 to early September 2008, Defendants and their co-conspirators announced three separate Titanium Dioxide price increases and at least two energy surcharges,” and that these price increases were made amidst declining demand for TiO<sub>2</sub>. *Id.* ¶ 99.

In light of the market conditions for TiO<sub>2</sub>, Plaintiffs allege that the price increases implemented by Defendants cannot be explained as anything other than an illegal agreement to fix prices and supply of the chemical. In support of this contention, Plaintiffs draw an analogy to the period in the 1990s—where there is no price fixing conspiracy alleged—when industry overcapacity lead to lower prices and slim profit margins. *Id.* ¶ 102. Plaintiffs allege that the price increases were profitable for Defendants. The average price per ton of TiO<sub>2</sub> increased nearly a third between 2002 and 2006, and Defendants increased their operating incomes and margins. *Id.* ¶ 103.

As a result of this alleged conspiracy, Plaintiffs contend that price competition in the sale of TiO<sub>2</sub> by Defendants (who control approximately 70 percent of global production capacity) has been restrained, suppressed, and eliminated throughout the United States. *Id.* ¶ 104. Plaintiffs further allege that prices for TiO<sub>2</sub> have been raised, fixed, maintained, and stabilized at artificial levels, and as a result, direct purchasers of TiO<sub>2</sub> have been “deprived of the benefit of free and open competition in the purchase” of the chemical. *Id.*

### III. CLASS CERTIFICATION ARGUMENTS—FRAMING THE ISSUES

In Plaintiffs’ Motion for Class Certification, they seek certification of the following class:

All persons and entities who purchased titanium dioxide in the United States directly from one or more Defendants or Tronox, or from any predecessors, parents, subsidiaries, or affiliates thereof, between February 1, 2003 and the present (“Class Period”). Excluded from the Class are Defendants, their co-conspirators, parent companies, predecessors, subsidiaries and affiliates, and all governmental entities.

Pls. Class Mot. at 1, ECF No. 246. According to the Plaintiffs, “[t]his case is directly analogous to the legion of antitrust price fixing cases that federal courts have routinely certified as class actions.” Pls.’ Class Mem. at 2. In that regard, Plaintiffs maintain that all the Rule 23 requirements are satisfied, and in particular, the predominance requirement of Rule 23(b)(3) has been met insofar as “[t]he trial will focus almost entirely on proving that the Cartel Members formed a cartel and conspired to artificially inflate prices for titanium dioxide, that they were successful in raising prices to supra-competitive levels, and that, as a result of this conspiracy, Class members sustained injury and damages when they paid artificially-inflated prices on their purchases of titanium dioxide.” *Id.* at 2-3.

Defendants argue that this case is not amenable to class treatment and contest certification of this class on the grounds that: (1) the named Plaintiffs have not satisfied the Rule 23(a) requirements of typicality and adequacy of representation; and (2) the Rule 23(b)(3) requirements of predominance cannot be met insofar as the Plaintiffs have set forth a flawed methodology for proving individual antitrust impact and damages on a class-wide basis. More specifically, Defendants argue that the named Plaintiffs' claims are not typical of the class because they are small purchasers of TiO<sub>2</sub>, are located in narrow geographies, and have individual interests antagonistic to the class as a whole. In this regard, Defendants argue that the named Plaintiffs are not adequate class representatives. Regarding the predominance prong of Rule 23(b), Defendants argue that even if the Plaintiffs could prove the existence of a price-fixing conspiracy, proof of individual injury and damages cannot be computed in a class-wide manner, and therefore must be resolved on an individual basis.

On the typicality and adequacy of representation prongs of Rule 23(a), Plaintiffs maintain that each named Plaintiff suffered the same injury—*i.e.*, they paid artificially inflated prices for TiO<sub>2</sub>—and therefore their interests are aligned with the class as a whole. On the predominance prong of Rule 23(b), Plaintiffs contend that they have sufficient class-wide proof to establish individual impact and damages. Plaintiffs plan to present evidence that Defendants colluded to fix the price of TiO<sub>2</sub> in the United States in the form of: (1) proof that Defendants implemented lock-step price increase announcements; (2) proof that Defendants regularly attended industry meetings that facilitated the workings of the conspiracy; and (3) expert analysis regarding the structure of the TiO<sub>2</sub> market and how that structure facilitates collusive agreements. To prove common impact, Plaintiffs plan to

present expert testimony showing that, as a result of the cartel, TiO<sub>2</sub> prices were supra-competitive across the class, and as a result affected each individual member of the class. To prove damages, Plaintiffs rely on the same expert analysis and methodology to show that the “aggregate” overcharge was felt uniformly across the class.

Accordingly, while each element of the Rule 23 class certification analysis will be addressed, this Court will focus on the issues most closely contested by the Defendants—typicality and adequacy of representation, and predominance of common issues.

**THE LEGAL STANDARD FOR CLASS CERTIFICATION UNDER RULE 23 OF THE  
FEDERAL RULES OF CIVIL PROCEDURE**

To obtain class certification, the Plaintiffs must meet all four requirements of Federal Rule of Civil Procedure 23(a), and at least one of the requirements of Rule 23(b). *Gunnells v. Healthplan Servs., Inc.*, 348 F.3d 417, 423 (4th Cir. 2003). Here, Plaintiffs seek certification of the proposed class under Rule 23(b)(3), which requires that common questions of law predominate. “Class certification requires a finding that each of the requirements of Rule 23 has been met” by a preponderance of the evidence. *In re Hydrogen Peroxide Antitrust Litig.*, 552 F.3d 305, 320 (3d Cir. 2008).

“The class action is an exception to the usual rule that litigation is conducted by and on behalf of the individual named parties only.” *Wal-Mart Stores, Inc. v. Dukes*, \_\_ U.S. \_\_, 131 S. Ct. 2541, 2550 (2011) (internal quotation marks and citation omitted). As recently noted by the Supreme Court in the *Wal-Mart* opinion, “Rule 23 does not set forth a mere pleading standard. A party seeking class certification must affirmatively demonstrate his compliance with the Rule—that is, he must be prepared to prove that there are *in fact* sufficiently numerous parties, common issues of law or fact, etc.” *Id.* at 2551. In ruling on a

class certification motion, a court must take a close look at the facts relevant to the certification question, even if those facts “tend to overlap with the merits of the case.” *Thorn v. Jefferson-Pilot Life Ins. Co.*, 445 F.3d 311, 319 (4th Cir. 2006); accord *Gariety v. Grant Thornton, LLP*, 368 F.3d 356, 366 (4th Cir. 2004) (“[W]hile an evaluation of the merits is not part of a Rule 23 analysis, the factors spelled out in Rule 23 must be addressed through findings, even if they overlap with issues on the merits.”).

The Supreme Court recently noted that “‘sometimes it may be necessary for the court to probe behind the pleadings before coming to rest on the certification question,’ and that certification is proper only if ‘the trial court is satisfied, after a *rigorous analysis*, that the prerequisites of Rule 23(a) have been satisfied.’” *Wal-Mart* 131 S. Ct. at 2551 (quoting *Gen. Tel. Co. of the Sw. v. Falcon*, 457 U.S. 147, 160 (1982)) (emphasis added); see also *Coopers & Lybrand v. Livesay*, 437 U.S. 463, 469 (1978) (“[T]he class determination generally involves considerations that are ‘enmeshed in the factual and legal issues comprising the plaintiff’s cause of action.’”) (quoting *Mercantile Nat. Bank v. Langdeau*, 371 U.S. 555, 558 (1963)).

The “rigorous analysis” that must be undertaken in the class certification context extends to disputes between experts: “Resolving expert disputes in order to determine whether a class certification requirement has been met is always a task for the court—no matter whether a dispute might appear to implicate the ‘credibility’ of one or more experts . . . .” *In re Hydrogen Peroxide*, 552 F.3d at 323-24. Of course, there are limits to a court’s resolution of expert disputes, and “a court should only engage itself in statistical dueling of experts if such dueling presents a valid basis for granting or denying class certification.” *In re Rail Freight Fuel Surcharge Antitrust Litig.*, \_\_ F. Supp. 2d \_\_, 2012 WL 2870207, at \*17

(D.D.C. June 21, 2012) (internal quotations, citations, and alterations omitted). As noted by the Third Circuit, “[t]hat weighing expert opinions is proper does not make it necessary in every case or unlimited in scope[,]” and “[r]igorous analysis need not be hampered by a concern for avoiding credibility issues; as . . . findings with respect to class certification do not bind the ultimate fact-finder on the merits. A court’s determination that an expert’s opinion is persuasive or unpersuasive on a Rule 23 requirement does not preclude a different view at the merits stage of the case.” *In re Hydrogen Peroxide*, 552 F.3d at 324.

## **ANALYSIS**

### **I. RULE 23(a) FINDINGS & CONCLUSIONS**

As previously noted, Plaintiffs must first establish—by a preponderance of the evidence—the four requirements of Rule 23(a): numerosity, commonality, typicality, and adequacy of representation. Each will be addressed in turn.

#### **A. Numerosity**

Rule 23(a)(1) provides that one of the requirements to bring a class action is that the class be “so numerous that joinder of all members is impracticable.” The Fourth Circuit has held that “[n]o specified number is needed to maintain a class action.” *Brady v. Thurston Motor Lines*, 726 F.2d 136, 145 (4th Cir. 1984) (quoting *Cypres v. Newport News Gen. & Nonsectarian Hosp. Ass’n*, 375 F.2d 648, 653 (4th Cir. 1967)). This Court has previously noted that, generally speaking, “courts find classes of at least 40 members sufficiently large to satisfy the impracticability requirement.” *Peoples v. Wendover Funding, Inc.*, 179 F. R.D. 492, 497 (D. Md. 1998).

Here, Plaintiffs assert that at least 700, and as many as several thousand TiO<sub>2</sub> purchasers were affected by the Defendants' alleged conspiracy. *See* Pls. Class Mem. at 18. Defendants do not contest this assertion, and this Court finds that the numerosity requirement is met in this case.

## **B. Commonality**

Rule 23(a)(2) requires a question of law or fact common to the class. "A common question is one that can be resolved for each class member in a single hearing," and does not "turn[ ] on a consideration of the individual circumstances of each class member." *Thorn v. Jefferson-Pilot Life Ins. Co.*, 445 F.3d 311, 319 (4th Cir. 2006) (internal quotation marks and citation omitted). The Fourth Circuit has held that, "in a class action brought under Rule 23(b)(3), the 'commonality' requirement of Rule 23(a)(2) is 'subsumed under, or superseded by, the more stringent Rule 23(b)(3) requirement that questions common to the class predominate over' other questions." *Lienhart v. Dryvit Systems, Inc.*, 255 F.3d 138, 147 n.4 (4th Cir. 2001) (quoting *Amchem Prods., Inc. v. Windsor*, 521 U.S. 591, 609 (1997)). Therefore, in the Fourth Circuit "[t]he common questions must be dispositive and overshadow other issues." *Lienhart*, 255 F.3d at 146. "Thus, the commonality requirement is relatively toothless in comparison with the related requirements of typicality and predominance." *In re Puerto Rican Cabotage Antitrust Litig.*, 269 F.R.D. 125, 131 (D.P.R. 2010).

As the Supreme Court recently noted, "[c]ommonality requires the plaintiff to demonstrate that the class members have suffered the same injury." *Wal-Mart*, 131 S. Ct. at 2551 (internal quotations and citation omitted). Here, Plaintiffs allege a multi-year price-fixing conspiracy that led to all class members being subjected to artificially inflated prices

for TiO<sub>2</sub>. Generally speaking, in the antitrust context, “courts have held that the existence of an alleged conspiracy or monopoly is a common issue that will satisfy” the commonality requirement.” 1 HERBERT B. NEWBERG & ALBA CONTE, NEWBERG ON CLASS ACTIONS § 3.10 (4th ed. 2002); *see also* 7A CHARLES ALAN WRIGHT, ARTHUR R. MILLER & MARY KAY KANE, FEDERAL PRACTICE AND PROCEDURE § 1763 (3d ed. 2005) (“the claimed existence of a conspiracy to fix prices . . . in violation of the antitrust laws has been found to present common questions in actions brought by plaintiffs who asserted that they had been harmed by those activities”) (hereinafter “FEDERAL PRACTICE AND PROCEDURE”); *In re Florida Cement and Concrete Antitrust Litig.*, 2012 WL 27668, at \*3 (S.D. Fla. Jan. 3, 2012) (collecting cases).

Plaintiffs have identified several questions that they assert are common to the class. Most notably, Plaintiffs maintain that the existence of the conspiracy is *the* central issue in this litigation. Defendants acknowledge this point in noting that “the commonality element of Rule 23(a) is satisfied because there is at least one common question—namely, whether the alleged conspiracy in fact existed.” Defs.’ Class Opp’n at 15, ECF no. 293. Accordingly, this Court finds by a preponderance of the evidence that the existence of the alleged conspiracy, standing alone, is sufficient to establish commonality. In other words, the Plaintiffs’ claims “depend upon a common contention,” and that common contention is “of a nature that is capable of classwide resolution—which means that its truth or falsity will resolve an issue that is central to the validity of each one of the claims in one stroke.” *Wal-Mart*, 131 S. Ct. at 2551.



### C. Typicality & Adequacy of Representation<sup>3</sup>

Rule 23(a)(3) requires that “the claims or defenses of the representative parties are typical of the claims or defenses of the class.” Fed. R. Civ. P. 23(a)(3). Courts have recognized that the commonality and typicality requirements of Rule 23(a) tend to merge. “Both serve as guideposts for determining whether . . . the named plaintiff’s claim and the class claims are so interrelated that the interests of the class members will be fairly and adequately protected . . . .” *Gen. Tel. Co. of the SW. v. Falcon*, 457 U.S. 147, 157 n.13 (1982). As this Court has previously noted, the typicality requirement determines “whether a sufficient relationship exists between the injury to the named plaintiff and the conduct affecting the class, so that the court may properly attribute a collective nature to the challenged conduct.” *Bullock v. Bd. of Educ. of Montgomery County*, 210 F.R.D. 556, 560 (D. Md. 2002) (citations omitted). The class representative “must be part of the class and possess the same interest and suffer the same injury as the class members.” *Broussard v. Meineke Discount Muffler Shops, Inc.*, 155 F.3d 331, 338 (4th Cir. 1998). Essentially, the typicality requirement ensures that “only those plaintiffs who can advance the same factual and legal arguments may be grouped together as a class.” *Id.* at 340. “The essence of the typicality requirement is captured by the notion that ‘as goes the claim of the named plaintiff, so goes the claims of the class.’” *Deiter v. Microsoft Corp.*, 436 F.3d 461, 466 (4th Cir. 2006) (citing *Broussard*, 155 F.3d at 340).

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<sup>3</sup> In their Class Opposition Memorandum, Defendants make the same arguments for both the typicality and adequacy of representation prongs of Rule 23. *See* Defs.’ Class Opp’n at 42-46. Because the typicality inquiry “tend[s] to merge with the adequacy of representation requirement,” *Falcon*, 457 U.S. at 158 n.13, the Court will address these elements together.

The final prerequisite under Rule 23(a) is that the persons representing the proposed class must be able “fairly and adequately to protect the interests” of all members of the class. The adequacy inquiry under Rule 23(a)(4) “serves to uncover conflicts of interest between named parties and the class they seek to represent.” *Amchem*, 521 U.S. at 625 (citing *Falcon*, 457 U.S. at 157-58 n.13.). As noted by the Fourth Circuit, for a conflict to defeat class certification, the conflict “must be more than merely speculative or hypothetical,” it “must be fundamental” and “go to the heart of the litigation.” *Gunnells v. Healthplan Servs., Inc.*, 348 F.3d 417, 430-31 (4th Cir. 2003) (internal quotations and citations omitted).

The typicality requirement “has been liberally construed by courts . . . [and] in the antitrust context, typicality will be established by plaintiffs and all class members alleging the same antitrust violations by defendants.” *In re Rail Freight*, 2012 WL 2870207, at \*26 (quoting *Meijer, Inc. v. Warner Chilcott Holdings Co. III, Ltd.*, 246 F.R.D. 293, 301 (D.D.C. 2007)). Notwithstanding courts’ liberal reading of the typicality requirement in price-fixing cases, Defendants maintain that the named Plaintiffs’ claims are not typical of the putative class for several reasons. For example, Defendants argue that the named Plaintiffs’ claims are not typical of the proposed class because they “(1) represent a very small portion of the total volume of titanium dioxide sold, (2) purchased a small number of the total titanium products offered by defendants, and (3) are located in narrow geographies.” Defs.’ Class Opp’n at 42.

This Court finds these arguments unavailing. As noted, to establish the typicality prong of Rule 23(a), “a class representative must be part of the class and possess the same interest and suffer the same injury as the class members.” *Deiter*, 436 F.3d at 466. While

some factual differences between the named Plaintiffs and the putative class may exist, they all seek the same relief: overcharge damages as a result of a price-fixing conspiracy in violation of Section 1 of the Sherman Act. *See In re Polyester Staple Antitrust Litig.*, 2007 WL 2111380, at \*10 (W.D.N.C. July 19, 2007) (“In determining whether the claims of the class representatives are typical of the class, the Court looks to the *nature* of the claims asserted (i.e, the legal theory) rather than any specific factual differences amongst class members.”) (citations omitted, emphasis added). Because Plaintiffs’ claims arose from the same alleged conduct, their claims are typical insofar as they will seek relief under the same legal theory and will “tend to advance the interests of the absent class members.” *Deiter*, 436 F.3d at 466.

Defendants also argue that each named Plaintiff will not adequately represent the interests of the class because of specific disqualifying problems. For example, Defendants argue that because Plaintiff Isaac is a chemical wholesaler, it is unlike the majority of the putative class members that are in the business of manufacturing products using TiO<sub>2</sub>. Moreover, Defendants point out that Isaac purchased only a small volume of TiO<sub>2</sub> in 2004, and later sold that product at a profit. Defendants argue that it is therefore unlikely that Isaac suffered any actual injury as a result of the alleged conspiracy.<sup>4</sup> *See* Defs.’ Class Opp’n at 43-44. With respect to Intervener Plaintiff Breen, Defendants highlight deposition testimony by Breen’s class representative that indicates Breen was not aware of any price-fixing until 2011—years after the filing of the lawsuit. Finally, Defendants argue that Plaintiff Haley is also an inadequate class representative. Defendants argue that because

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<sup>4</sup> To the extent that this argument overlaps with the predominance inquiry relating to impact, that argument will be addressed *infra*.

Haley ceased purchasing TiO<sub>2</sub> in 2008, it therefore has no incentive to “prove a conspiracy beyond mid-2008 when it sold its manufacturing business and no longer had a need to purchase titanium dioxide.” Defs.’ Class Opp’n at 45. When Haley did purchase TiO<sub>2</sub>, it purchased the product through a buying group that negotiated low prices, thereby lessening any alleged impact of the price-fixing conspiracy.<sup>5</sup> Moreover, Defendants argue that they have unique defenses pertaining to Haley, particularly with respect to the statute of limitations.

Notwithstanding these minor issues identified by the Defendants, this Court can discern no “fundamental” conflict that goes to the “heart of the litigation.” *Gunnells*, 348 F.3d at 430-31. The thrust of the litigation will concern the *Defendants’* conduct and the existence of the alleged conspiracy. Accordingly, the named Plaintiffs and the putative class will “share common objectives and the same factual and legal positions,” and therefore “have the same interest in establishing the liability of [Defendants].” *Id.* at 431. As such, this Court finds, by a preponderance of the evidence, that Plaintiffs have satisfied the typicality and adequacy of representation prongs of Rule 23(a).<sup>6</sup>

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<sup>5</sup> See *supra* note 4.

<sup>6</sup> Pursuant to the 2003 amendments to Rule 23, the Court’s inquiry into the qualifications and experience of Plaintiffs’ counsel are no longer investigated under Rule 23(a), but instead are to be determined under Rule 23(g). See *infra* at Section IV for that discussion.

## II. RULE 23(b)(3) FINDINGS & CONCLUSIONS

Having determined that the Plaintiffs have satisfied Rule 23(a)'s requirements, the Court now turns Rule 23(b)(3) which requires a finding that common questions "predominate over any questions affecting only individual members, and that a class action is superior to other available methods for fairly and efficiently adjudicating the controversy." Fed. R. Civ. P. 23(b)(3). "The Rule 23(b)(3) predominance inquiry tests whether proposed classes are sufficiently cohesive to warrant adjudication by representation." *Amchem*, 521 U.S. at 623. Although the predominance inquiry of Rule 23(b)(3) is similar to the commonality requirement of Rule 23(a), the Fourth Circuit has held that the predominance requirement is "more stringent" than the Rule 23(a) requirement. *Thorn*, 445 F.3d at 319 (quoting *Leinhardt v. Dryvit Sys., Inc.*, 255 F.3d 138, 147 n.4 (4th Cir. 2001)); see also *Amchem*, 521 U.S. at 624 (the Rule 23(b)(3) criterion is "far more demanding" than the commonality requirement). In determining whether the Plaintiffs have satisfied their burden, this Court must conduct a "rigorous analysis" of the Rule 23(b)(3) requirements and the Plaintiffs' methodology for proving those requirements, and must act as finder of fact in the face of conflicting expert testimony. *In re Hydrogen Peroxide Antitrust Litig.*, 552 F.3d at 323-24. In order to meet the predominance prong of Rule 23(b)(3), a plaintiff must "demonstrate that the element[s] of [the legal claim] is capable of proof at trial through evidence that is common to the class rather than individual." *Id.* at 311. "Because the nature of the evidence that will suffice to resolve a question determines whether the question is common or individual, a district court must formulate some prediction as to how specific issues will play

out in order to determine whether common or individual issues predominate in a given case.” *Id.* (internal quotations and citations omitted).

With that standard in mind, the Court notes at the outset that, like many courts confronting class certification motions involving horizontal price-fixing claims, it is presented with a battle of the experts with regard to the predominance prong of Rule 23(b)(3). Both parties rely heavily on their respective—and diametrically opposed—expert declarations.<sup>7</sup> Nevertheless, this Court has rigorously analyzed the conflicting testimony, making credibility findings as needed, in order to determine whether Plaintiffs have met their burden on each class certification requirement. *See In re Hydrogen Peroxide Antitrust Litig.*, 552 F.3d at 324. Because much of the conflicting expert testimony is informed by competing factual characterizations regarding the nature of the market for TiO<sub>2</sub>, this Court will first make the necessary factual findings regarding that market before proceeding on to the substantive requirements of Rule 23(b)(3). *See Blades v. Monsanto Co.*, 400 F.3d 562, 575 (8th Cir. 2005) (“[I]n ruling on class certification, a court may be required to resolve disputes concerning the factual setting of the case. This extends to the resolution of expert disputes concerning the import of evidence concerning the factual setting—such as economic evidence as to business operations or market transactions.”).

#### **A. The Titanium Dioxide Market—Findings of Fact**

As will be discussed *infra*, in order for this Court to certify a class in this case, it must be satisfied that the Plaintiffs have set forth a plausible methodology for proving class-wide

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<sup>7</sup> At the August 13, 2012 class certification hearing, the parties did not introduce live expert testimony—instead, they introduced excerpts of deposition testimony, and excerpts of the expert declarations.

impact as a result of the alleged conspiracy. In other words, assuming the alleged conspiracy existed, Plaintiffs still must be able to show that each class member was injured, or “impacted” by that conspiracy through evidence that is common to the class as a whole. Generally speaking, this will require the Plaintiffs to show that the class members paid a higher price for TiO<sub>2</sub> purchased from Defendants than they would have absent the existence of a conspiracy. *See Hanover Shoe v. United Shoe Machinery Corp.*, 392 U.S. 481, 489 (1968) (“when a buyer shows that the price paid by him . . . is illegally high and also shows the amount of the overcharge, he has made out a prima facie case of injury and damage”).

Seemingly following the plaintiff-side class certification script<sup>8</sup> for horizontal price fixing cases, Plaintiffs have introduced an expert declaration that relies, in part, on certain oligopolistic tendencies in the TiO<sub>2</sub> market that Plaintiffs allege facilitate collusion and proves common impact. Specifically, Plaintiffs’ Expert, Dr. Russell Lamb, maintains that (1) the multiple nearly simultaneous price increase announcements indicate coordinated pricing; (2) the TiO<sub>2</sub> market is dominated by Defendants; (3) TiO<sub>2</sub> is a commodity-like product that is interchangeable across suppliers; (4) there are many buyers in the market for TiO<sub>2</sub>; (5) there are high barriers to entry in the market for TiO<sub>2</sub>; (6) demand for TiO<sub>2</sub> was stable or declining during the Class Period; and (7) competition occurs primarily on the basis of price in the TiO<sub>2</sub> market. *See* Report of Dr. Russell Lamb (“Lamb Report”) ¶¶ 28-62. These factors undergird Dr. Lamb’s conclusion that if a price-fixing conspiracy occurred, that

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<sup>8</sup> For example, Dr. John Beyer, a frequent plaintiffs’ expert in class certification cases, has outlined the relevant market factors used to prove common impact in *The Role of Economics in Class Certification and Class-Wide Impact*, in LITIGATING CONSPIRACY: AN ANALYSIS OF COMPETITION CLASS ACTIONS (Stephen Pitel ed. 2006).



conspiracy would have impacted all members of the class by way of artificially inflated prices for TiO<sub>2</sub>.

Following their own script,<sup>9</sup> Defendants argue that certain of these market factors are not present in the market for TiO<sub>2</sub>, and as a result, Dr. Lamb's conclusion that common proof of class-wide impact exists is therefore erroneous. Specifically, Defendants' expert, Dr. Michelle Burtis, contends that: (1) Defendants produce hundreds of different TiO<sub>2</sub> products, and therefore TiO<sub>2</sub> cannot be considered a commodity-like product; (2) TiO<sub>2</sub> pricing is highly complex, individualized, and is not the primary basis for competition among Defendants; and (3) class members had the ability to purchase TiO<sub>2</sub> from producers that are not alleged cartel members, thereby necessitating individual inquiry. *See* Report of Dr. Michelle Burtis ("Burtis Report") ¶¶ 14-57.

Each of these TiO<sub>2</sub> market characteristics will be analyzed below.

*Price increase announcements indicate coordinated behavior.* After analyzing "more than ten years' worth of price increase announcements issued by the Cartel Members," Dr. Lamb concludes that "throughout the Class Period, the Cartel Members announced multiple nearly simultaneous price increases that applied across the board to all users of titanium dioxide, and to all products and grades of titanium dioxide sold by the Cartel Members." Lamb Report ¶ 29. Furthermore, Dr. Lamb concludes that these price increase announcements occurred close-in-time to meetings in which many of the cartel members participated. Accordingly, Dr. Lamb posits that "[w]hile [firms] can certainly announce price increases

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<sup>9</sup> *See* John H. Johnson & Gregory K. Leonard, *Economics and the Rigorous Analysis of Class Certification in Antitrust Cases*, 3 J. COMPETITION L. & ECON., 341, 344-345 (2007) (taking issue with the "prototypical plaintiffs' argument and arguing that "the requirement of common proof of antitrust injury should usually present a substantial hurdle for plaintiffs.").



without coordination, it is hard to explain the same, or nearly the same, price increases being repeatedly announced nearly simultaneously by different firms supposedly acting independently.” *Id.* ¶ 28. In support of his conclusions, Dr. Lamb presents a table summarizing the price increase announcements announced by the Defendants in this case. *See id.* at Table 2. Importantly, Dr. Lamb concludes that the price increase announcements “were efforts by the Cartel Members to confirm their cartel behavior and signal to each other and to their customers that price increases would be implemented and enforced market-wide.” *Id.* ¶ 29.

In response, Defendants’ expert, Dr. Burtis does not take issue with the *existence* of the price increase announcements, but rather, with the *interpretation* of those announcements. Specifically, Dr. Burtis maintains that the price increase announcements by Defendants are not necessarily evidence of collusion. Citing a textbook on industrial organization, Dr. Burtis contends that parallel pricing behavior is a natural consequence of competition in oligopolies, and therefore “it would be expected that a unilateral price increase announcement by one Defendant would influence the decisions of the other Defendants, and that a plausible response would be to announce similar price increases quickly.” Burtis Report ¶ 117. Finally, Dr. Burtis argues that even if price increases were *announced* nearly simultaneously, there is no evidence that they were *implemented* in any uniform way. *Id.* ¶ 116.

This Court finds credible Dr. Lamb’s conclusions that the Defendants implemented multiple nearly simultaneous price increases throughout the class period, and those price increases can be used to prove coordinated pricing. As noted, Dr. Burtis does not dispute

the fact that the price increase announcements were made, but does dispute the inferences that can be drawn from those announcements.

*TiO<sub>2</sub> Market Dominance by Defendants.*

In Plaintiffs' Consolidated Amended Complaint, they allege that Defendants are the leading suppliers of TiO<sub>2</sub> in the world, and control approximately 70 percent of the global production capacity. CAC ¶ 1. Dr. Lamb, using publicly available documents common to the class as a whole, confirmed this assertion, and concludes "class-wide evidence shows that the Cartel Members controlled the vast majority of sales of titanium dioxide to the Class members during the Class Period in this matter." Lamb Report ¶¶ 30-31. The Defendants' Annual Reports and SEC filings confirm this finding and indicate that the Defendants produce between 70 to 75 percent of the world's supply of TiO<sub>2</sub>. *See id.* ¶ 31. Furthermore, Dr. Lamb's analysis concludes that the Cartel Members controlled 98 percent of the North American market for TiO<sub>2</sub> during the Class Period. *Id.* ¶ 34, and Table 4. Dr. Lamb concludes that "[w]hen a small group of firms dominate the market for a product, it makes it easier for them to form a cartel such as the one alleged here." *Id.* ¶ 36.

Dr. Burtis does not directly contradict Dr. Lamb's assertions regarding the market power belonging to the alleged conspirators in this case. Instead, she argues that evidence exists showing that TiO<sub>2</sub> customers had the ability to purchase the product from producers other than the alleged co-conspirators throughout the relevant period. Burtis Report ¶ 57. In this regard, Dr. Burtis argues that the ability to purchase TiO<sub>2</sub> from other producers necessitates individual inquiry into "each putative class member's ability to use TiO<sub>2</sub> products produced 'offshore' and the extent to which they used this ability to negotiate

prices with Defendants. *Id.* However, because Dr. Burtis does not dispute Dr. Lamb's general conclusions that the market for TiO<sub>2</sub> is a highly concentrated one, this Court will take that fact as established, and will address the import of Dr. Burtis' argument in the predominance section *infra*.

*TiO<sub>2</sub> as a commodity-like product & competition based primarily on price*

According to Dr. Lamb, TiO<sub>2</sub> is a commodity-like product and is interchangeable<sup>10</sup> across suppliers. Lamb Report ¶ 37. This factor has two main implications: first, when a product is characterized as a commodity, competition is based primarily on price and, second, when a product is interchangeable with other similar products produced by competitors, coordination among firms is facilitated because "firms wishing to form a cartel can more easily monitor and detect defections from a price-fixing agreement." *Id.* Dr. Lamb concludes that TiO<sub>2</sub> is a commodity-like product even though each Defendant produces numerous different grades of the product for many different applications. In so concluding, Dr. Lamb relies on the Defendants' SEC filings, market research reports, and internal documents indicating that the different grades of TiO<sub>2</sub> produced by one Defendant were fungible with those produced by other Defendants. *See id.* ¶ 40. According to Dr. Lamb, this factor "makes the Cartel for titanium dioxide far more likely."

Dr. Burtis and Defendants take great issue with Dr. Lamb's conclusion that TiO<sub>2</sub> is a commodity-like product. Dr. Burtis contends that, although the TiO<sub>2</sub> products produced by the Defendants all contain the same chemical, they vary widely in their intended use and

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<sup>10</sup> "Interchangeability implies that one product is roughly equivalent to another for the use to which it is put; while there may be some degree of preference for one over the other, either would work effectively." *Queen City Pizza, Inc. v. Domino's Pizza, Inc.*, 124 F.3d 430, 437 (3d Cir. 1997) (citation omitted).

application. Dr. Burtis points to evidence indicating that when TiO<sub>2</sub> purchasers considered changing suppliers, they frequently needed to test the new product to make sure it would work in their production process. Burtis Report ¶ 16. Furthermore, certain TiO<sub>2</sub> purchasers were required to reformulate their production processes to accommodate different TiO<sub>2</sub> products. *Id.* In short, Dr. Burtis has provided substantial evidence indicating that the TiO<sub>2</sub> products produced by the different Defendants were not identical to each other, and that the individual Defendants spent time and money attempting to differentiate their products from those of their competitors.

Notwithstanding this, after reviewing all the evidence, Defendants' contention that titanium dioxide is not a commodity-like product is simply belied by their own characterization of the chemical. For example, in its 2006 Form 10-K,<sup>11</sup> Defendant Millennium stated: “[d]ue to the *commodity nature* of certain of [its] products, competition in [the global titanium dioxide market] is based primarily on price . . .” Lamb Report ¶ 38. Similarly, in its 2010 10-K, Defendant Kronos stated that “the majority of our grades and substantially all of our production are considered *commodity* pigments with price and availability being the most significant competitive factors.” *Id.* Defendants also produced so-called “crosswalk” documents that note which products offered by competitors are compatible or interchangeable with their own. *See id.* ¶ 40 n. 93 and accompanying text.

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<sup>11</sup> Required by the Securities and Exchange Commission, the Form 10-K is a comprehensive annual report summarizing a company's performance and financial condition.

Accordingly, while there is certainly some differentiation among TiO<sub>2</sub> products produced by the Defendants, the Court credits Dr. Lamb's conclusion that TiO<sub>2</sub> is a commodity-like product and that competition among producers is based primarily on price.<sup>12</sup>

*Many buyers in the TiO<sub>2</sub> market.*

Dr. Lamb concludes that each cartel member maintains a large customer base and that there are numerous purchasers of TiO<sub>2</sub>. In this regard, Dr. Lamb asserts that “[w]hen there are many buyers in a market for a particular good, a cartel such as the one alleged here is more likely to be effective.” Lamb Report ¶ 44. “This is because the incentive to a cartel member for undercutting the conspiracy is lower when there are many smaller purchasers since each potential sale is small while the risk of disrupting the cartel can carry large penalties.” *Id.* Dr. Burtis does not dispute the fact that the buying side of the TiO<sub>2</sub> market is unconcentrated. Accordingly, the Court will take this fact as established.

*High barriers to entry.*

Next, Dr. Lamb concludes that there are high barriers to entry in the market for TiO<sub>2</sub>. Specifically, there is a significant level of capital investment required to build a competitive TiO<sub>2</sub> manufacturing facility—it is estimated that a new plant would require \$250-500 million and three to five years to build. Lamb Report ¶¶ 49-50. Additionally, the current TiO<sub>2</sub> producers hold patents for the proprietary productions processes, which would impose another significant barrier to entry into the market. Defendants and Dr. Burtis do

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<sup>12</sup> This conclusion relates only to the commodity-like nature of TiO<sub>2</sub>. Defendants' arguments that pricing for TiO<sub>2</sub> is determined by individual negotiations and varied contract terms will be discussed in the predominance section *infra*.

not dispute the fact that there are high barriers to entry in the TiO<sub>2</sub> market, and this Court will take this fact as established.

*Stable or declining demand for titanium dioxide and excess production capacity*

Dr. Lamb concludes that demand for TiO<sub>2</sub> experienced a 34.8 percent decline between 2002 and 2009. Lamb Report ¶ 60. Moreover, he concludes that during this period, there was significant excess capacity in the production of the chemical—meaning that TiO<sub>2</sub> producers were producing less of the chemical than their capabilities allowed. *Id.* ¶ 71-74. According to Dr. Lamb, standard economic theory predicts that, in the absence of a cartel, these factors would lead to falling prices for TiO<sub>2</sub> as a result of competition for market share among competitors. *See id.* ¶ 69. However, Dr. Lamb determined that prices for TiO<sub>2</sub> did not fall as economic theory predicts, but instead rose significantly during the Class Period. *Id.* ¶ 70. According to Dr. Lamb, “[t]his combination of stable or falling demand and increasing prices constitutes common proof that the effect of the anticompetitive behavior which forms the heart of this Cartel was to raise prices above those that would have prevailed in the market otherwise.” *Id.*

While Dr. Burtis disputes Dr. Lamb’s conclusion that these market factors constitute common proof of class-wide impact, she does not directly refute his underlying findings—that demand for TiO<sub>2</sub> declined during the Class Period and that substantial excess capacity existed in the industry. Accordingly, this Court will take those facts as established, and will consider their import below.

## **B. Predominance**

In considering the Rule 23(b)(3) predominance requirement, “a court’s rigorous analysis begins with the elements of the underlying cause of action.” *In re Rail Freight*, 2012 WL 2870207, at \*30. “If proof of the essential elements of the cause of action requires individual treatment, then class certification is unsuitable.” *In re Hydrogen Peroxide Antitrust Litig.*, 552 F.3d at 311.

To establish an antitrust violation, a plaintiff must prove three elements: (1) a violation of the antitrust laws—here, Section 1 of the Sherman Act; (2) individual injury resulting from that violation; and (3) measurable damages. *See* 15 U.S.C. § 1; *Deiter v. Microsoft Corp.*, 436 F.3d 461, 467 (4th Cir. 2006). However, at the class certification stage, Plaintiffs need only show by a preponderance of the evidence that these elements are “capable of proof at trial through evidence that is common to the class rather than individual to its members.” *In re Hydrogen Peroxide Antitrust Litig.*, 552 F.3d at 311-12 (emphasis added). Each element is addressed in turn.

### ***i. Violation of Antitrust Law***

Plaintiffs allege that Defendants conspired to fix the price of TiO<sub>2</sub>. CAC ¶ 2. This type of horizontal price-fixing scheme, if it existed, is a *per se* violation of the Sherman Act. *See Texaco, Inc. v. Dagher*, 547 U.S. 1, 5 (2006). Defendants do not dispute that this element may be proved by common evidence. *See* Defs.’ Class Opp’n at 15; *see also* 7AA FEDERAL PRACTICE AND PROCEDURE § 1781 (3d ed. 2005) (“whether a conspiracy exists is a common question that is thought to predominate over the other issues in the case and has the effect of satisfying the first prerequisite in Rule 23(b)(3)”). The question of whether a conspiracy

to fix the price of TiO<sub>2</sub> existed is a fact capable of common proof because “plaintiffs’ allegations of price fixing indisputably will focus on the actions of the defendants, and, as such, proof for these issues will not vary among class members.” *In re Rail Freight*, 2012 WL 2870207, at \*31 (quotation and citations omitted). Accordingly, this Court finds by a preponderance of the evidence that the element of antitrust injury is capable of proof at trial through evidence that is common to the class.

The Court now turns to the real crux of Defendants’ opposition to class certification—that is, whether the Plaintiffs can prove the elements of common impact and damages on a class-wide basis.

## ***ii. Impact***

The second element the Plaintiffs will need to establish is that the class members suffered injury from the alleged price-fixing conspiracy.<sup>13</sup> This element, commonly referred to as “impact,” can be “likened to the causation element in a negligence cause of action. The term means simply that the antitrust violation caused injury to the antitrust plaintiff.” *In re Urethane Antitrust Litig.*, 252 F.R.D. 629, 634 (D. Kan. 2008) (quoting *State of Alabama v. Blue Bird Body Co.*, 573 F.2d 309, 317 (5th Cir. 1978)). Of course, at this stage in the litigation, the

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<sup>13</sup> This elements involves two distinct questions: “One is the familiar factual question whether the plaintiff has indeed suffered harm, or ‘injury-in-fact.’ The other is the legal question whether any such injury is ‘injury of the type the antitrust laws were intended to prevent and that flows from that which makes defendants’ acts unlawful.” *Cordes & Co. Fin. Servs., Inc. v. A.G. Edwards & Sons, Inc.*, 502 F.3d 91, 106 (quoting *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 489 (1977)). Because Plaintiffs in this case allege only one injury—that they were subjected to artificially inflated prices for TiO<sub>2</sub> as a result of a price-fixing conspiracy in violation of Section 1 of the Sherman Act—the Defendants do not challenge this element. *See Cordes*, 502 F.3d at 107 (“Because each class member allegedly suffered the same type of injury, the legal question of whether such an injury is ‘of the type the antitrust laws were intended to prevent and that flows from that which makes defendants’ acts unlawful,’ *Brunswick*, 429 U.S. at 489, is a common one.”). Accordingly, the legal question of injury is common to the class, and this Court will focus on the first prong of the impact analysis—whether the class members suffered “injury-in-fact.”



Plaintiffs need not *prove* this element, “[i]nstead, the task for plaintiffs at class certification is to demonstrate that the element of antitrust impact is *capable of proof at trial* through evidence that is common to the class rather than individual to its members.” *In re Hydrogen Peroxide Antitrust Litig.*, 552 F.3d at 311-12 (emphasis added). In other words, Plaintiffs’ burden of showing antitrust impact is “satisfied by its proof of *some damage* flowing from the unlawful conspiracy; inquiry beyond this minimum point goes only to the amount and not the fact of damage. It is enough that the illegality is shown to be a material cause of the injury.” *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 114 n.9 (1969) (emphasis added).

To meet their burden, therefore, Plaintiffs must show, using evidence common to the class, that class members paid a higher price for TiO<sub>2</sub> from Defendants than they would have absent the alleged conspiracy. *See Hanover Shoe*, 392 U.S. 481, 489. In *Blades v. Monsanto Co.*, the Eighth Circuit defined common proof as follows:

The nature of the evidence that will suffice to resolve a question determines whether the question is common or individual. If, to make a prima facie showing on a given question, the members of a proposed class will need to present evidence that varies from member to member, then it is an individual question. If the same evidence will suffice for each member to make a prima facie showing, then it becomes a common question.

400 F.3d at 566 (citations omitted).

As is often the case in horizontal price fixing cases, Plaintiffs here seek to show this element is capable of common proof by comparing a hypothetical “but-for” price—*i.e.*, the price that would have been paid in the absence of the conspiracy—with the prices actually paid by the Plaintiffs during the Class Period. *See In re EPDM Antitrust Litig.*, 256 F.R.D. 82, 88 (D. Conn. 2009). In this kind of but-for comparison, prices are analyzed in a scenario that is “free of the restraints and conduct alleged to be anticompetitive.” *In re Rail Freight*,

2012 WL 2870207, at \*41 (quoting *Blades v. Monsanto, Co.*, 400 F.3d at 569. If Plaintiffs can show that they paid a higher actual price than the but-for price using evidence common to the class, they have met their burden on the impact element.

As the *Rail Freight* court recently summarized, there are various methods by which plaintiffs may prove that common evidence is capable of proving impact:

[O]ne way of showing that common questions predominate on the issue of injury-in-fact

is to show that there is a common method for proving that the class plaintiffs paid higher actual prices than in the but-for world, such as using an economic regression model incorporating a variety of factors to demonstrate that a conspiracy variable was at work during the class period, raising prices above the “but-for” level for all plaintiffs.

*In re EPDM Antitrust Litig.*, 256 F.R.D. at 88. . . .

Comparing but-for prices with actual transaction prices by regression analysis, however, is not the only way for plaintiffs to succeed in a motion for class certification. Other accepted types of evidence for establishing class-wide injury-in-fact include: evidence of lock-step increases of national price lists; proof that defendants conspired to maintain an inflated base price from which all negotiations began; and evidence of structural factors that make an industry susceptible to successful collusion. Ultimately, the question is whether plaintiffs have shown by a preponderance of the evidence—through regressions, structural industry factors, or any other persuasive means—that methods of common proof exist to show class-wide impact.

*In re Rail Freight*, 2012 WL 2870207, at \*41 (internal quotations and citations omitted).

Plaintiffs in this case seek to prove impact by way of all the enumerated methods above—they proffer class-wide evidence in the form of: (1) industry characteristics tending to show that the TiO<sub>2</sub> industry was ripe for collusion before the alleged conspiracy; (2) evidence of nearly simultaneous (lock-step) price increase announcements during the relevant period; (3) Defendants’ own transactional data showing that prices rose over the

period; (4) evidence showing that even if the price increase announcements were not “implemented” uniformly, they nevertheless served to set an artificially high base level upon which the Defendants’ began negotiations; (5) a multiple regression model designed by Dr. Lamb that attempts to show that, absent the alleged conspiracy, the but-for prices for TiO<sub>2</sub> would have been lower; and (6) a pricing structure analysis that attempts to show that prices for TiO<sub>2</sub> would have responded similarly to coordinated pricing activity.

In arguing that common evidence exists to show impact on a class-wide basis, Plaintiffs rely heavily on the fact that defendants announced multiple nearly simultaneous price increase announcements throughout the class period. Plaintiffs argue that these price increase announcements amount to common proof insofar as they served to raise prices for TiO<sub>2</sub> across the board for all purchasers. Defendants counter that, regardless of the price increase *announcements*, the evidence shows that price increases were not *implemented* uniformly, and more importantly, individual TiO<sub>2</sub> transactions between buyers and sellers were the result of extensive negotiations between the parties. This is a valid point, and there certainly is substantial evidence showing that the end prices paid by TiO<sub>2</sub> customers were the product of individual negotiation. *See, e.g.* Burtis Report ¶¶ 34-56. However, according to the Plaintiffs, these price increase announcements served to set an artificially high baseline for price negotiations, and point to compelling evidence supporting this proposition. *See, e.g.*, Lamb Rebuttal ¶ 91 nn. 115-16 and accompanying text, ECF No. 306-1.

Having reviewed the submissions and the parties’ arguments, this Court concludes that the evidence of the nearly simultaneous price increase announcements, in conjunction with the structural factors present in the TiO<sub>2</sub> industry, *see supra*, makes the element of

antitrust impact “capable of proof at trial through evidence that is common to the class rather than individual to its members.” *In re Hydrogen Peroxide Antitrust Litig.*, 552 F.3d at 311-12. As discussed in *In re Rail Freight*, “this case falls within the line of cases holding that class-wide injury-in-fact can be proven at trial by showing that the allegedly conspiratorial [price increases] were the starting point from which negotiations for discounts began.” 2012 WL 2870207, at \*62 (collecting cases).

Next, the Plaintiffs argue that class-wide impact can be demonstrated by showing that the prices actually paid by TiO<sub>2</sub> customers were higher than they would have been but-for the conspiracy. To do this, Plaintiffs rely on a multiple regression model created by Dr. Lamb. As described in a reference guide published by the Federal Judicial Center:

Multiple regression analysis is a statistical tool used to understand the relationship between or among two or more variables. Multiple regression involves a variable to be explained—called the dependent variable—and additional explanatory variables that are thought to produce or be associated with changes in the dependent variable. For example, . . . in an antitrust cartel damages case, the plaintiff’s expert might utilize multiple regression to evaluate the extent to which the price of a product increased during the period in which the cartel was effective, after accounting for costs and other variables unrelated to the cartel. The defendant’s expert might use multiple regression to suggest that the plaintiff’s expert had omitted a number of price-determining variables.

DANIEL L. RUBINFELD, REFERENCE GUIDE ON MULTIPLE REGRESSION 305-06 (Fed. Judicial Ctr., 3d ed. 2011).

In his report, Dr. Lamb explains the variables used in his regression analysis to isolate the effect of the cartel on prices for TiO<sub>2</sub>. Lamb Report ¶¶ 75-95. He concludes that, as a result of the cartel, prices for TiO<sub>2</sub> were more than seven percent higher during the Class

Period. *Id.* ¶ 94. Defendants attack Dr. Lamb's regression model on numerous grounds which will not be discussed in detail here. That is because:

The real question before this court is whether the plaintiffs have established a *workable* multiple regression equation, not whether plaintiffs' model actually *works*, because the issue at class certification is not which expert is the most credible, or the most accurate modeler, but rather have the plaintiffs demonstrated that there is a way to prove a class-wide measure of [impact<sup>14</sup>] through generalized proof.

*In re EPDM Antitrust Litig.*, 256 F.R.D. at 100.

In short, this Court finds that Dr. Lamb's regression analysis accurately reflects the characteristics of the titanium dioxide industry, and the facts in this case. While his model may not be perfect,<sup>15</sup> this Court concludes that a regression model is certainly *capable* of proving class-wide impact at trial. In light of the structural factors in the TiO<sub>2</sub> industry, this case falls squarely within the type of case that courts have found well-suited to regression analyses. *See, e.g. In re Rail Freight Antitrust Litig.*, 2012 WL 2870207, at \*72 (collecting cases). Defendants' quibbles with Dr. Lamb's regression model largely center on the *results* of his analysis—in other words, Defendants argue that if Dr. Lamb included more data, or extended certain dates, his very own regression would show that prices of TiO<sub>2</sub> did not increase during the time period. However, by “merely disputing the *results* of the plaintiffs' experts' analysis rather than the feasibility of using a single formula methodology,” Defendants raise a “merits issue, not a class certification issue.” *In re EPDM Antitrust Litig.*,

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<sup>14</sup> The *EPDM* court made this statement in the context of evaluating the damages prong of the predominance inquiry. However, it is equally applicable on the “impact” prong as well.

<sup>15</sup> Dr. Lamb notes that his model is “preliminary, given that discovery is ongoing.” He states that he is “highly confident that a model similar to this one will be capable of showing the degree to which prices were artificially inflated as a result of the Cartel and computing aggregate overcharges to the Class as a whole at trial.” Lamb Report ¶ 82.

256 F.R.D. at 96. Considering similar arguments, the United States District Court for the Southern District of New York recently stated:

[D]efendants do not assert that plaintiffs have failed to prove some factual predicate necessary for demonstrating causation and artificiality on a class-wide basis. Instead, defendants' objections go *solely* to whether plaintiffs' models will *in fact* demonstrate causation and artificiality, and hence, are unrelated to the requirements of class certification. Indeed, by arguing that plaintiffs' models, as corrected by defendants' expert, show that Amaranth did not cause any artificiality during the Class Period, defendants impliedly concede that causation can be evaluated on a class-wide basis.

*In re Amaranth Natural Gas Commodities Litig.*, 269 F.R.D. 366, 385 (S.D.N.Y. 2010).

Accordingly, this Court concludes that Dr. Lamb's multiple regression model is "capable" of proving class-wide impact at trial "through evidence that is common to the class rather than individual to its members." *In re Hydrogen Peroxide Antitrust Litig.*, 552 F.3d at 311-12. Defendants will be free to attack the probativeness of that model or its perceived shortcomings as they see fit.

As previously noted, "[b]ecause the nature of the evidence that will suffice to resolve a question determines whether the question is common or individual, a district court must *formulate some prediction as to how specific issues will play out* in order to determine whether common or individual issues predominate in a given case." *Id.* (internal quotations and citations omitted, emphasis added). It does not take a crystal ball to predict the way this case will play out at trial—Plaintiffs will overwhelmingly rely on common evidence to prove the existence of a price-fixing conspiracy. Accordingly, "[c]ommon questions predominate where 'even if each Class Member . . . were to bring suit individually, each plaintiff would have to allege and prove virtually identical facts.'" *In re EPDM Antitrust Litig.*, 256 F.R.D. at

103 (quoting *In re Merrill Lynch & Co. Research Reports Sec. Litig.*, 246 F.R.D. 156, 165 (S.D.N.Y. 2007)).

### *iii. Damages*

The final element Plaintiffs will have to prove at trial is that they suffered “measurable damages.” *In re Hydrogen Peroxide Antitrust Litig.*, 552 F.3d at 311. In contrast to the “impact” prong of the Rule 23(b) analysis, which asks only “*whether* the plaintiffs were harmed,” the damages prong asks “by how much.” *In re EPDM Antitrust Litig.*, 256 F.R.D. at 88. At the class certification stage, Plaintiffs must show, by a preponderance of the evidence, that they will be able to prove damages using common proof. *In re Rail Freight*, 2012 WL 2870207, at \*74.

In this case, Plaintiffs argue that common proof of damages exists in the form of Dr. Lamb’s regression analysis. Dr. Lamb contends that his regression method is “a standard economic method [ ] that is capable of being used to compute aggregate damages to the class as a whole.” Lamb Report ¶ 114. Briefly, he uses his regression analysis to arrive at a seven percent overcharge during the course of the alleged conspiracy (*i.e.*, prices for TiO<sub>2</sub> were seven percent higher than they would have been absent the conspiracy). He then proposes to multiply the total volume of TiO<sub>2</sub> purchases by Class Members during the period by that percentage overcharge to arrive at “the total amount of damages owed to the Class.” *Id.* ¶ 116. In other words, Dr. Lamb’s regression is only capable of calculating an “aggregate” overcharge that is not capable of distinguishing between individual class members.



As the well-developed economic literature on cartels, relied on by Plaintiffs for their “impact” argument, makes clear, certain structural factors in an industry make collusion more attractive or more feasible. At the same time, however, that same literature teaches that one cannot assume an illegal price-fixing agreement would damage each class member in the same manner. That is because those very same structural factors that encourage collusion also encourage “cheating” by co-conspirators, thereby rendering individual damage amounts different among the members of a class. This theory, first enunciated by Nobel laureate George Stigler in *A Theory of Oligopoly*, 72 J. Pol. Econ. 44, 46 (1964), is well-established in the antitrust context. *See, e.g.*, RICHARD A. POSNER, ANTITRUST LAW 60-69 (2d ed. 2001). As demonstrated by Stigler, the empirical evidence indicates that even where a horizontal price-fixing agreement has been reached, that agreement will likely result in a range of impacts across the class. 72 J. Pol. Econ. At 46.

The Fourth Circuit has consistently held that “average” or “aggregate” damages are not an appropriate measure of damages in an antitrust case. For example, in *Windham v. Am. Brands, Inc.*, the court stated, “[t]he language that Congress used in [the Antitrust statute] . . . leaves no room for awarding damages to some amorphous ‘fluid class’ rather than, or in addition, to one or more actually injured persons. It likewise does not permit any person to recover damages sustained not by him, but by someone else who happens to be a member of such class.” 565 F.2d 59, 66 (4th Cir. 1977) (quotations and citation omitted). While individual issues do not predominate for the purposes of this Court’s “impact” analysis, individual issues certainly overshadow common issues with respect to damages. For example, as the Defendants have clearly shown, some level of individual negotiation took



place between buyers and sellers of TiO<sub>2</sub> regarding rebates, price, non-price terms, and the like. If a price-fixing conspiracy existed, it is clear that such a conspiracy would necessarily have damaged the individual class members differently.

The need to inquire into individual damage calculations, however, is not an impediment to class certification. As summarized by the Fourth Circuit, a damages inquiry *necessarily* requires individual proof:

. . . Rule 23 contains no suggestion that the necessity for individual damage determinations destroys commonality, typicality, or predominance, or otherwise forecloses class certification. In fact, Rule 23 explicitly envisions class actions with such individualized damage determinations. *See* Fed. R. Civ. P. 23 advisory committee's note (1966 Amendment, subdivision (c)(4)) (noting that Rule 23(c)(4) permits courts to certify a class with respect to particular issues and contemplates possible class adjudication of liability issues with "the members of the class . . . thereafter . . . required to come in individually and prove the amounts of their respective claims."); *see also* 5 *Moore's Federal Practice* § 23.23[2] (1997) ("[T]he necessity of making an individualized determination of damages for each class member generally does not defeat commonality.").

Indeed, "[i]n actions for money damages under Rule 23(b)(3), courts *usually* require individual proof of the amount of damages each member incurred." *Id.* at § 23.46[2][a] (1997) (emphasis added). When such individualized inquiries are necessary, if "common questions predominate over individual questions as to liability, courts generally find the predominance standard of Rule 23(b)(3) to be satisfied." *Id.*

*Gunnells v. Healthplan Servs., Inc.*, 348 F.3d 417, 427-28 (4th Cir. 2003). Given the inherent difficulties in assessing individual damages questions in this type of case, the Court notes that it has several options with which to consider damages at a future date. As discussed by the Second Circuit, there are at least five methods to deal with the individual damages inquiry:

(1) bifurcating liability and damage trials with the same or different juries; (2) appointing a magistrate judge or special master to preside over individual damages proceedings; (3) decertifying the class after the liability trial and providing notice to class members concerning how they may proceed to prove damages; (4) creating subclasses; or (5) altering or amending the class.

*In re Visa Check/MasterMoney Antitrust Litig.*, 280 F.3d 124, 141 (citations omitted). Indeed, the Fourth Circuit in the *Gunnells* case reiterated its previous admonition to “take full advantage of the provision in [Rule 23(c)(4)] permitting class treatment of separate issues . . . to reduce the range of disputed issues in complex litigation.” 348 F.3d at 426 (quoting *In re A.H. Robins Co., Inc.*, 880 F.2d 709, 740 (4th Cir. 1989)).

Accordingly, while there exist numerous individual questions of damages, that is not enough to defeat class certification, and one or more of the above-listed methods may need to be utilized as this case progresses. *See Gunnells*, 348 F.3d at 427 (“class certification ‘provides a single proceeding in which to determine the merits of the plaintiffs’ claims, and therefore protects *the defendant* from inconsistent adjudications.”) (quoting 5 *Moore’s Federal Practice* § 23.02 (1999)).

### **C. Superiority**

The final requirement of Rule 23(b)(3) is that this Court must determine that “a class action is superior to other available methods for fairly and efficiently adjudicating the controversy.” Fed. R. Civ. P. 23(b)(3). “In deciding whether certification of a class is superior to other trial methods, the Court considers whether the resolution of common issues advances the litigation as a whole, as opposed to leaving a large number of issues for case-by-case adjudication.” *In re Polyester Staple Antitrust Litig.*, 2007 WL 2111380, at \*31 (W.D.N.C. July 19, 2007) (internal quotation and citation omitted). Here, the Defendants

have not specifically argued that the superiority prong has not been met, and this Court concludes that because common issues predominate, class action treatment is superior to other available methods of adjudicating the Plaintiffs' claims. In short, class treatment will "achieve economies of time, effort, and expense, and promote . . . uniformity of decision as to persons similarly situated, without sacrificing procedural fairness or bringing about undesirable results." *Amchem*, 521 U.S. at 615.

### III. ADDITIONAL ISSUES

Rule 23(c)(1)(C) of the Federal Rules of Civil Procedure provides simply that "[a]n order that grants or denies class certification may be altered or amended before final judgment." Fed. R. Civ. P. 23(c)(1)(C). This Court has previously stated that "[a] district court has 'broad discretion in determining whether the action may be maintained as a class action,' . . . and so long as the court considers the proper criteria, it is permitted to exercise such discretion." *Doe v. Lally*, 467 F. Supp. 1339, 1345 (D. Md. 1979) (citations omitted). As this court previously held, "[a] federal district court possesses the same broad discretion in determining whether to modify or even decertify a class." *Wu v. MAMSI Life & Health Ins. Co.*, 256 F.R.D. 158, 162 (D. Md. 2008) (citing *Gen. Tel. Co. of the Sw. v. Falcon*, 457 U.S. 147, 160 (1982)). In fact, a federal district court judge has an affirmative obligation to ensure that the class membership remains at all times consistent with the underlying facts and procedural posture of the case. See *Richardson v. Byrd*, 709 F.2d 1016, 1019 (5th Cir. 1983) ("Under Rule 23 . . . the district judge must define, redefine, subclass, and decertify as appropriate in response to the progression of the case from assertion to facts."); *Chisolm v. TranSouth Fin. Corp.* 194 F.R.D. 538, 544 (E.D. Va. 2000) ("[T]he Court is duty bound to

monitor its class decision and, where certification proves improvident, to decertify, subclassify, alter, or otherwise amend its class certification.”).

Here, in opposing class certification, the Defendants have raised several additional issues that do not fit neatly into the previously discussed Rule 23 categories. For example, Defendants claim that many members of the putative class entered into contracts with Defendants that contain mandatory arbitration provisions, forum-selection clauses, and jury waiver provisions. Neither party briefed these issues extensively, and they were only briefly addressed at the August 13 class certification hearing. Because it is unclear to what extent the putative class members have this type of contractual provision, and to what extent the Defendants will seek to uphold those agreements, this Court concludes that “the possible arbitration [or other contractual bar] of some class members does not, by itself, defeat class certification.” *In re Rail Freight Antitrust Litig.*, 2012 WL 2870207, at \*28 (internal quotation and citation omitted).

Accordingly, to the extent certain putative class members’ contracts render them atypical of the class as a whole, this Court will exercise its discretion to amend its class certification Order as necessary.

#### **IV. RULE 23(g)—APPOINTING CLASS COUNSEL**

Pursuant to the 2003 amendments to Rule 23, the qualifications and experience of Plaintiffs’ counsel are now considered under Rule 23(g). Rule 23(g)(1) provides that “a court that certifies a class must appoint class counsel.” Fed. R. Civ. P. 23(g)(1). In appointing class counsel, a court must consider:

- (i) the work counsel has done in identifying or investigating potential claims in the action;

- (ii) counsel's experience in handling class actions, other complex litigation, and the types of claims asserted in the action;
- (iii) counsel's knowledge of the applicable law; and
- (iv) the resources that counsel will commit to representing the class[.]

*Id.* This Court has already appointed the following interim co-lead class counsel: Gold Bennett Cera & Sidener LLP; Leiff, Cabraser, Heimann & Bernstein LLP; and the Joseph Saveri Law Firm. *See* Amended Case Mgmt. Order, ECF No. 326. Those law firms, with the addition of Eric L. Cramer of Berger & Montague, P.C. and Linda Nussbaum of Grant & Eisenhofer, P.A. have been appointed members of the Plaintiffs' Executive Committee. *See* Case Mgmt. Order, ECF No. 106. Finally, Paul Mark Sandler of Shapiro Sher Guinot & Sandler has been appointed Liaison Counsel. *See id.* As noted by the Plaintiffs:

Since their initial appointment, the above-listed firms . . . have devoted substantial time and resources to this case, including complex legal matters on a variety of motions, case management, discovery planning, and extensive meetings and conferrals with Defendants regarding ongoing discovery. Moreover, proposed Class Counsel have demonstrated their extensive experience and expertise prosecuting antitrust, class action, and complex civil litigation cases and have successfully litigated antitrust class actions and other similar cases in courts throughout the United States.

Pls. Class Mem. at 41-42.

Defendants do not object or disagree with the Plaintiffs' characterization of their representation. This Court has reviewed the Rule 23(g)(1) requirements, and concludes that Plaintiffs' proposed co-lead counsel are well qualified to represent the class in this case. Accordingly, those counsel listed above will be appointed class counsel.

### CONCLUSION

For the reasons stated above, this Court finds by a preponderance of the evidence that the Plaintiffs have established each necessary element of Rule 23 of the Federal Rules of Civil Procedure. Accordingly, Plaintiffs' Motion for Class Certification and for Appointment of Class Counsel (ECF No. 246) will be GRANTED.

Dated: August 28, 2012

A separate Order follows.

/s/  
Richard D. Bennett  
United States District Judge